

114

1127-7

# ANALYTICAL ABSTRACTS

PUBLISHED BY

The Society for Analytical Chemistry

U. of ILL. LIBRARY

DEC 3 1969

CHICAGO CIRCLE

---

INDEX TO VOLUME 16

1969

---



65  
71  
49  
51.16  
969  
index  
N/C

# **ANALYTICAL ABSTRACTS**

PUBLISHED BY

**The Society for Analytical Chemistry**

A MONTHLY JOURNAL DEALING  
WITH ALL BRANCHES OF  
ANALYTICAL CHEMISTRY

---

**VOL. 16**

**1969**

---

PRINTED FOR THE SOCIETY BY

**W. HEFFER & SONS, LTD.**

4, PETTY CURY, CAMBRIDGE, ENGLAND





# ANALYTICAL ABSTRACTS

## EDITORIAL COMMITTEE

CHAIRMAN: H. J. CLULEY, M.Sc., Ph.D., F.R.I.C.

D. C. ABBOTT, B.Sc., Ph.D., F.R.I.C.

N. EVERS, B.Sc., Ph.D., F.R.I.C., M.Chem.A., Hon. M.P.S.

B. FLEET, M.S., Ph.D., A.R.I.C.

C. H. R. GENTRY, B.Sc., F.R.I.C.

J. H. HUNT, B.Sc., Ph.D.

P. G. JEFFERY, M.Sc., Ph.D., D.I.C., F.R.I.C.

W. C. JOHNSON, M.B.E., F.R.I.C.

H. F. W. KIRKPATRICK, B.Sc., Ph.D., F.R.I.C.

J. E. PAGE, Ph.D., D.Sc., F.R.I.C.

D. I. REES, M.Sc., Ph.D., A.R.I.C.

A. A. SMALES, O.B.E., D.Sc., F.R.I.C.

B. J. WALBY, B.Sc., A.R.I.C.

J. S. WRAGG, B.Sc., F.R.I.C.

## AND THE PRESIDENT AND HONORARY OFFICERS

### President of the Society

T. S. WEST, B.Sc. Ph.D., D.Sc., F.R.I.C.

### Hon. Secretary of the Society

W. H. C. SHAW, F.P.S., F.R.I.C., M.Chem.A.

### Hon. Treasurer of the Society

G. W. C. MILNER, D.Sc., F.R.I.C., A.Inst.P.

### Editor

Irs. H. I. FISK, B.Sc.

### Assistant Editor

B. HARRIS

---

# ERRATA

VOL. 15, 1968

- Index, p. 29, column 2, line 68, *for Lange, J. read Lange, J. O. R.*  
 Index, p. 50, column 2, line 54, *for thalene-sulphonic read thalene-1-sulphonic*  
 Index, p. 60, column 2, *transpose the entries for Freinkel, N. and Freier, E. F.*  
 Index, p. 99, column 1, line 66, *for Ames, R. read Amos, R.*  
 Index, p. 112, column 2, line 6, *insert Chromatography on ion-exchange papers. XXII. before Chromatography*  
 Index, p. 130, column 2, line 23, *for Mitsev, L., read Mitsev, I.,*  
 Index, p. 137, column 1, line 72, *for Mitsev, L., read Mitsev, I.,*  
 Index, p. 149, column 1, line 11, *for Vicente-Pérez, S., read Vicente-Pérez, S.,*  
 Index, p. 150, column 1, line 63, *for Pfaff, J. read Pfaff, J. D.*  
 Index, p. 150, column 2, line 55, *for Philotts, J. A. read Philpotts, J. A.*  
 Index, p. 157, column 2, line 7, *this line should read of iron by potassium cyanide - potassium ferro-*  
 Index, p. 166, column 2, line 10, *insert Use of NMR and mass spectrometry in pharmacy. III. before Determination*  
 Index, p. 166, column 2, line 12, *insert Use of NMR and mass spectrometry in pharmacy. IV. before Determination*  
 Index, p. 170, column 2, line 65, *for Pfaff, J. read Pfaff, J. D.*  
 Index, p. 186, column 1, line 2, *for Sostanze G. read Sostanze Grasse.*  
 Index, p. 191, column 2, line 18, *for Takashashi, Masao, read Takahashi, Masao,*  
 Index, p. 221, line 5, *for Cosmetics Dyes, read Cosmetics, Dyes,*  
 Index, p. 225, column 2, line 20, *for diethyl(triphenylsiloxy)ñ. read diethyl(triphenylsiloxy)-,*  
 Index, p. 227, column 2, line 33, *delete methyl,*  
 Index, p. 244, column 2, line 52, *for TLC of by read by TLC of*  
 Index, p. 245, column 1, line 50, *for Cholecaciferol, read Cholecalciferol,*  
 Index, p. 256, column 2, lines 48 and 49, *for test-tube, technique read 'test-tube' technique*  
 Index, p. 270, column 2, line 10, *for cotton read Gossypium*  
 Index, p. 310, column 1, line 22, *for N-benzylideneaniline, read N-benzylideneaniline,*  
 Index, p. 313, column 1, lines 57 and 58, *for tetradecyldimethylbenzylammonium read benzyldimethyl-tetradecylammonium*  
 Index, p. 320, column 2, line 2, *this line should read apparatus, vacuum, for far-i.r. region, 1215.*  
 Index, p. 324, column 1, lines 63 and 64, *for—, N-dimethylamino, read Succinamic acid, N-dimethylamino-, and transpose this entry to follow the entry for Sublimation*  
 Index, p. 335, column 2, line 65, *this line should read of steroids, free, in, enzymic - gas chrom., 2870.*  
 Index, p. 342, list of patents abstracted, line 2, *for ABSTRACTS read PATENTS*

VOL. 15, 1968

Abstract

No.	Line	
1356	2	<i>for 2-amino-1,3,4-thiadiazole-5-thiol read 5-amino-1,3,4-thiadiazole-2-thiol</i>
3163	15, 16, 17	<i>for 2-(3-methyl-5-oxo-1-phenylpyrazolin-4-ylazo)-4-nitrobenzoic acid (nitroanthran-ylazo) read 2-(3-methyl-5-oxo-1-phenylpyrazolin-4-ylazo)-5-nitrobenzoic acid (nitroanthranilazo)</i>

Appropriate modifications should be made to the Author and Subject Indexes, Vol. 15, 1968.

VOL. 16, 1969

Abstract

No.	Line	
3	125	<i>for hydroxethylenediaminetriacetic read (2-hydroxyethyl)ethylenediaminetriacetic</i>
11	19	<i>for I read I</i>
33	10	<i>for 485 read 471</i>
43	5	<i>for Yuroku Yamamoto read Yuroku Yamamoto</i>
208	2	<i>delete ] after groups</i>
246	2	<i>for isonicotinoylhydrazide read isonicotinohydrazide</i>
325	2	<i>for naphthalene-1-sulphonyl read naphthalene-1-sulphonyl</i>
362	4	<i>for isonicotinoyl- read isonicotino-</i>
372	4	<i>for 18 read 93</i>
549	15	<i>for mashing read masking</i>
615	37	<i>insert or after SiO<sub>3</sub></i>
816	9	<i>for 10% read 0.01%</i>
1095	10	<i>insert and O. L. Mayrhofer after K. Möhler</i>
1197	1	<i>insert Mixed compounds of calcium and titanium with tiron. II. before Determination</i>
1197	2	<i>delete II.</i>
1253	5	<i>insert B after chloramine</i>
1300	8	<i>for 3H<sub>2</sub>O read <sup>3</sup>H<sub>2</sub>O</i>
1384	1	<i>insert Analysis of polycaprolactam. I. before Determination</i>
1507	18	<i>delete the comma after benzathine</i>
1564	6	<i>for paste read pâte</i>
1689	2	<i>insert [IV.] after graphy.</i>
1711	14	<i>for <sup>3</sup>H read <sup>3</sup>He</i>
1971	1	<i>insert Analysis of polycaprolactam. II. before Determination</i>
2131	3	<i>for E. Cor read E. Corio</i>
2179	2	<i>for catechol and epicatechol read catechin and epicatechin</i>

## Abstract

No.	Line	
2416	9, 10	for 5-ethylamino-2-(2-pyridylazo)- <i>p</i> -cresol read 5-ethylamino-2-(2-pyridylazo)- <i>p</i> -cresol
2444	25	delete counter-
2444	26	for carbon electrode read carbon counter-electrode
2529	3	for B. L. Pepe read B. Lassandro Pepe
2647	3	for <b>g</b> utamic read <b>g</b> lutamic
2737	10	for 1929, <b>17</b> (15) read 1929, <b>17</b> (15), 1
2774	9	for fractions are read fractions as
2794	2	for W. F. Hilhite read W. F. Wilhite
2933	7	insert max. absorption at 425 nm in the pH range 3.3 after having
3181	1	for <b>purines</b> read <b>purine derivatives</b>
3226	4	for <b>2-(2-<i>N</i>-benzylanilino)-</b> read <b>2-(<i>N</i>-benzylanilino)-</b>
3344	27	insert added after contained
3353	1	for <b>or</b> read <b>for</b>

Cross-references after abstract 1092, line 4. For spectrographic read spectrophotometric



# JOURNALS

The following list contains the names of journals (and their abbreviations) from which papers have been abstracted regularly during 1969. Journals that have been omitted are those that contain only an occasional analytical paper, and a number of Russian journals from which translated abstracts have been published through the medium of *Referativnyi Zhurnal*.

The abbreviations, in italics, after the full names of the journals refer to the languages in which the journals are published.

<i>Acta chem. fenn.</i> .. .. .	<i>Acta Chemica Fennica</i> [Eng.]
<i>Acta chem. scand.</i> .. .. .	<i>Acta Chemica Scandinavica</i> [Eng.]
<i>Acta chim. hung.</i> .. .. .	<i>Acta Chimica Academiae Scientiarum Hungaricae</i> [Eng., Ger.]
<i>Acta pharmac. tox.</i> .. .. .	<i>Acta Pharmacologica et Toxicologica</i> [København] [Eng.]
<i>Acta pharm. hung.</i> .. .. .	<i>Acta Pharmaceutica Hungarica</i> [Hung.]
<i>Acta pharm. jugosl.</i> .. .. .	<i>Acta Pharmaceutica Jugoslavica</i> [Serbo-Croat]
<i>Acta pharm. suec.</i> .. .. .	<i>Acta Pharmaceutica Suecica</i> [Eng.]
<i>Acta Pol. pharm.</i> .. .. .	<i>Acta Poloniae Pharmaceutica</i> [Pol.]
<i>Afinidad</i> .. .. .	<i>Afinidad</i> [Span.]
<i>Agric. biol. Chem.</i> .. .. .	<i>Agricultural and Biological Chemistry</i> [Tokyo] [Eng.]
<i>Am. Dyestuff Rept'r</i> .. .. .	<i>American Dyestuff Reporter</i> [Eng.]
<i>Am. ind. Hyg. Ass. J.</i> .. .. .	<i>American Industrial Hygiene Association Journal</i> [Eng.]
<i>Am. J. clin. Path.</i> .. .. .	<i>American Journal of Clinical Pathology</i> [Eng., Fr.]
<i>Am. Miner.</i> .. .. .	<i>American Mineralogist</i> [Eng.]
<i>Anal. științ. Univ. Al. I. Cuza</i> .. .. .	<i>Analele Științifice de Universității 'Al. I. Cuza' din Iași</i> [Fr., Ger., Rom.]
<i>Analyst, Lond.</i> .. .. .	<i>Analyst</i> [Eng.]
<i>Analyt. Biochem.</i> .. .. .	<i>Analytical Biochemistry</i> [Eng.]
<i>Analyt. Chem.</i> .. .. .	<i>Analytical Chemistry</i> [Eng.]
<i>Analytica chim. Acta</i> .. .. .	<i>Analytica Chimica Acta</i> [Eng., Fr., Ger.]
<i>Analyt. Lett.</i> .. .. .	<i>Analytical Letters</i> [Eng., Fr., Ger.]
<i>Analyzer</i> .. .. .	<i>Analyzer</i> [Eng.]
<i>An. Asoc. quim. argent.</i> .. .. .	<i>Anales de la Asociación Química Argentina</i> [Span.]
<i>An. Bromat.</i> .. .. .	<i>Anales de Bromatologia</i> [Span.]
<i>Angew. Chem., int. Edn</i> .. .. .	<i>Angewandte Chemie, International Edition</i> [Eng.]
<i>Annali Chim.</i> .. .. .	<i>Annali di Chimica</i> [Ital.]
<i>Annali Ist. sup. Sanità</i> .. .. .	<i>Annali dell'Istituto superiore Sanità</i> [Eng., Fr., Ital.]
<i>Annls Biol. clin.</i> .. .. .	<i>Annales de Biologie Clinique</i> [Fr.]
<i>Annls Falsif. Expert. chim.</i> .. .. .	<i>Annales des Falsifications et de l'Expertise Chimique</i> [Fr.]
<i>Annls pharm. fr.</i> .. .. .	<i>Annales Pharmaceutiques Françaises</i> [Fr.]
<i>An. R. Soc. esp. Fis. Quím., B</i> .. .. .	<i>Anales de la Real Sociedad Española de Física y Química, B</i> [Span.]
<i>Antibiotiki</i> .. .. .	<i>Antibiotiki</i> [Russ.]
<i>Appl. Optics</i> .. .. .	<i>Applied Optics</i> [Eng.]
<i>Appl. Spectrosc.</i> .. .. .	<i>Applied Spectroscopy</i> [Eng.]
<i>Arch. EisenhüttWes.</i> .. .. .	<i>Archiv für das Eisenhüttenwesen</i> [Ger.]
<i>Arch. Pharm., Berl.</i> .. .. .	<i>Archiv der Pharmazie (und Berichte der Deutschen pharmazeutischen Gesellschaft)</i> [Ger.]
<i>Archs Biochem. Biophys.</i> .. .. .	<i>Archives of Biochemistry and Biophysics</i> [Eng.]
<i>Arch. Tox.</i> .. .. .	<i>Archiv für Toxikologie</i> [Ger.]
<i>Ark. Kemi</i> .. .. .	<i>Arkiv för Kemi</i> [Eng.]
<i>Armyan. khim. Zh.</i> .. .. .	<i>Armianskii Khimicheskii Zhurnal</i> [Russ.]
<i>Arzneimittel-Forsch.</i> .. .. .	<i>Arzneimittel-Forschung</i> [Ger.]
<i>At. Absorption Newsl.</i> .. .. .	<i>Atomic Absorption Newsletter</i> [Eng.]
<i>Atomn. Énerg.</i> .. .. .	<i>Atomnaya Énergiya</i> [Russ.]
<i>Atmosph. Environment</i> .. .. .	<i>Atmospheric Environment</i> [Eng.]
<i>Aust. J. Chem.</i> .. .. .	<i>Australian Journal of Chemistry</i> [Eng.]
<i>Aust. J. exp. Biol. med. Sci.</i> .. .. .	<i>Australian Journal of Experimental Biology and Medical Science</i> [Eng.]
<i>Azerb. khim. Zh.</i> .. .. .	<i>Azerbaidzhanskii Khimicheskii Zhurnal</i> [Russ.]
<i>Beitr. Tabakforsch.</i> .. .. .	<i>Beiträge zur Tabakforschung</i> [Eng., Ger.]
<i>Biochem. biophys. Res. Commun.</i> .. .. .	<i>Biochemical and Biophysical Research Communications</i> [Eng.]
<i>Biochem. J.</i> .. .. .	<i>Biochemical Journal</i> [Eng.]
<i>Biochim. appl.</i> .. .. .	<i>Biochimica Applicata</i> [Ital.]
<i>Biochim. biophys. Acta</i> .. .. .	<i>Biochimica et Biophysica Acta</i> [Eng.]
<i>Biokhimiya</i> .. .. .	<i>Biokhimiya</i> [Russ.]
<i>B.I.S.R.A. Open Rep.</i> .. .. .	<i>B.I.S.R.A. Open Report</i> [Eng.]
<i>Boll. chim.-farm.</i> .. .. .	<i>Bollettino Chimico Farmaceutico</i> [Ital.]
<i>Boll. Laboratori chim. prov.</i> .. .. .	<i>Bollettino dei Laboratori Chimici Provinciali</i> [Ital.]
<i>Boll. Soc. ital. Biol. sper.</i> .. .. .	<i>Bollettino della Società Italiana di Biologia Sperimentale</i> [Ital.]
<i>Brauwissenschaft</i> .. .. .	<i>Brauwissenschaft</i> [Ger.]
<i>Brennst.-Chem.</i> .. .. .	<i>Brennstoff-Chemie</i> [Ger.]
<i>Br. J. appl. Phys. (J. Phys., D)</i> .. .. .	<i>British Journal of Applied Physics (Journal of Physics D)</i> [Eng.]
<i>Br. med. J.</i> .. .. .	<i>British Medical Journal</i> [Eng.]

<i>Br. Plast.</i> .. .. .	British Plastics [Eng.]
<i>Bul. Inst. politeh. Iași</i> .. .. .	Buletinul Institutului Politehnic din Iași [Rom.]
<i>Bull. Agr. Chem. Insp. Stn</i> .. .. .	Bulletin of the Agricultural Chemical Inspection Station [Jap.]
<i>Bull. chem. Soc. Japan</i> .. .. .	Bulletin of the Chemical Society of Japan [Eng.]
<i>Bull. envir. Contam. Toxicol.</i> .. .. .	Bulletin of Environmental Contamination and Toxicology [Eng.]
<i>Bull. Narcot.</i> .. .. .	Bulletin on Narcotics [Eng.]
<i>Bull. Soc. Chim. biol.</i> .. .. .	Bulletin de la Société de Chimie Biologique [Fr.]
<i>Bull. Soc. chim. Fr.</i> .. .. .	Bulletin de la Société Chimique de France [Fr.]
<i>Bull. Trav. Soc. Pharm. Lyon</i> .. .. .	Bulletin des Travaux de la Société de Pharmacie de Lyon [Fr.]
<i>Can. J. Biochem.</i> .. .. .	Canadian Journal of Biochemistry [Eng.]
<i>Can. J. Chem.</i> .. .. .	Canadian Journal of Chemistry [Eng.]
<i>Can. J. pharm. Sci.</i> .. .. .	Canadian Journal of Pharmaceutical Science [Eng.]
<i>Can. Spectrosc.</i> .. .. .	Canadian Spectroscopy [Eng., Fr.]
<i>Cereal Chem.</i> .. .. .	Cereal Chemistry [Eng.]
<i>Chem. Engng News</i> .. .. .	Chemical and Engineering News [Eng.]
<i>Chemia analit.</i> .. .. .	Chemia Analityczna [Eng., Fr., Ger., Pol.]
<i>Chemické Listy</i> .. .. .	Chemické Listy [Czech]
<i>Chemické Zvesti</i> .. .. .	Chemické Zvesti [Slovak]
<i>Chemický Prům.</i> .. .. .	Chemický Průmysl [Czech]
<i>Chemie-Ingr-Tech.</i> .. .. .	Chemie-Ingenieur-Technik [Ger.]
<i>Chemikerzeitung—chem. Appar.</i> .. .. .	Chemiker-Zeitung—Chemische Apparatur [Ger.]
<i>Chemistry, Taipei</i> .. .. .	Chemistry, Taipei [Chin.]
<i>Chem. pharm. Bull., Tokyo</i> .. .. .	Chemical & Pharmaceutical Bulletin [Eng., Ger.]
<i>Chem. Tech., Berl.</i> .. .. .	Chemische Technik [Ger.]
<i>Chem. Ind.</i> .. .. .	Chemistry & Industry [Eng.]
<i>Chim. analyt.</i> .. .. .	Chimie Analytique [Fr.]
<i>Chimia</i> .. .. .	Chimia [Eng., Fr., Ger.]
<i>Chimica Ind., Milano</i> .. .. .	Chimica e l'Industria [Ital.]
<i>Clin. Chem.</i> .. .. .	Clinical Chemistry [Eng.]
<i>Clinica chim. Acta</i> .. .. .	Clinica Chimica Acta [Eng., Fr., Ger.]
<i>Colln Czech. chem. Commun.</i> .. .. .	Collection of Czechoslovak Chemical Communications [Eng., Ger.]
<i>Column</i> .. .. .	Column: W. G. Pye Gas Chromatography Bulletin [Eng.]
<i>C. r. Acad. bulg. Sci.</i> .. .. .	Compte Rendu de l'Académie Bulgare des Sciences [Eng., Fr., Ger.]
<i>C. r. hebđ. Séanc. Acad. Sci., Paris</i> .. .. .	Compte Rendu Hebdomadaire des Séances de l'Académie des Sciences [Fr.]
<i>Croat. chem. Acta</i> .. .. .	Croatica Chemica Acta [Eng., Ger.]
<i>Čslká Farm.</i> .. .. .	Československá Farmacie [Czech, Slovak]
<i>Curr. Sci.</i> .. .. .	Current Science [Eng.]
<i>Diss. Abstr.</i> .. .. .	Dissertation Abstracts [Eng.]
<i>Dissnes pharm., Warsz.</i> .. .. .	Dissertationes Pharmaceuticae [Pol.]
<i>Dokl. Akad. Nauk SSSR</i> .. .. .	Doklady Akademii Nauk SSSR [Russ.]
<i>Dokl. Akad. Nauk uzbeĥ. SSR</i> .. .. .	Doklady Akademii Nauk Uzbekskoi SSR [Russ.]
<i>Double Liaison</i> .. .. .	Double Liaison [Fr.]
<i>Dt. ApothZig</i> .. .. .	Deutsche Apotheker-Zeitung [Ger.]
<i>Dt. LebensmittRdsch.</i> .. .. .	Deutsche Lebensmittel-Rundschau [Ger.]
<i>Dt. Z. ges. gerichtl. Med.</i> .. .. .	Deutsche Zeitschrift für die gesamte gerichtliche Medizin [Ger.]
<i>Econ. Geol.</i> .. .. .	Economic Geology [Eng.]
<i>Eczacilik Bül.</i> .. .. .	Eczacilik Bülteni [Turk.]
<i>Envir. Sci. Technol.</i> .. .. .	Environmental Science & Technology [Eng.]
<i>Enzymologia</i> .. .. .	Enzymologia [Eng.]
<i>Erdöl Kohle</i> .. .. .	Erdöl und Kohle, Erdgas, Petrochemie [Ger.]
<i>Experientia</i> .. .. .	Experientia [Eng., Ger.]
<i>Farbe Lack</i> .. .. .	Farbe und Lack [Ger.]
<i>Farmacja pol.</i> .. .. .	Farmacja Polska [Pol.]
<i>Farmaco, Ed. prat.</i> .. .. .	Farmaco, Edizione Pratica [Fr., Ital.]
<i>Farmaco, Ed. scient.</i> .. .. .	Farmaco, Edizione Scientifica [Ital.]
<i>Farm. Obzor</i> .. .. .	Farmaceutický Obzor [Czech]
<i>Faserforsch. TextTech.</i> .. .. .	Faserforschung und Textiltechnik [Ger.]
<i>Fette Seifen AnstrMittel</i> .. .. .	Fette, Seifen, Anstrichmittel [Ger.]
<i>Flame Notes</i> .. .. .	Flame Notes [Eng.]
<i>Fuel, Lond.</i> .. .. .	Fuel [Eng.]
<i>Geochim. cosmochim. Acta</i> .. .. .	Geochimica et Cosmochimica Acta [Eng.]
<i>Geokhimiya</i> .. .. .	Geokhimiya [Russ.]
<i>Getreide Mehl</i> .. .. .	Getreide und Mehl [Ger.]



<i>Gidrokhim. Mater.</i> .. .. .	Gidrokhimicheskie materialy [Russ.]
<i>Gig. Sanit.</i> .. .. .	Gigiena i Sanitariya [Russ.]
<i>G-I-T</i> .. .. .	Glas-Instrumenten-Technik [Eng., Ger.]
<i>Grasas Aceit.</i> .. .. .	Grasas y Aceites [Span.]
<i>Helv. chim. Acta</i> .. .. .	Helvetica Chimica Acta [Fr., Ger.]
<i>Herba pol.</i> .. .. .	Herba polonica [Pol.]
<i>Hilger J.</i> .. .. .	Hilger Journal [Eng.]
<i>Hlth Phys.</i> .. .. .	Health Physics [Eng.]
<i>Hoppe-Seyley's Z. physiol. Chem.</i> .. .. .	Hoppe-Seyley's Zeitschrift für physiologische Chemie [Ger.]
<i>Hutn. Listy</i> .. .. .	Hutnické Listy [Czech]
<i>Indian J. appl. Chem.</i> .. .. .	Indian Journal of Applied Chemistry [Eng.]
<i>Indian J. Biochem.</i> .. .. .	Indian Journal of Biochemistry [Eng.]
<i>Indian J. Chem.</i> .. .. .	Indian Journal of Chemistry [Eng.]
<i>Indian J. Dairy Sci.</i> .. .. .	Indian Journal of Dairy Science [Eng.]
<i>Indian J. Pharm.</i> .. .. .	Indian Journal of Pharmacy [Eng.]
<i>Indian J. pure appl. Phys.</i> .. .. .	Indian Journal of Pure and Applied Physics [Eng.]
<i>Indian J. Technol.</i> .. .. .	Indian Journal of Technology [Eng.]
<i>Industrie agrarie</i> .. .. .	Industrie agrarie [Ital.]
<i>Industrie chim. belge</i> .. .. .	Industrie Chimique Belge [Flem., Fr.]
<i>Infección Quím. analít. pura apl. Ind.</i> .. .. .	Información de Química Analítica, Pura y Aplicada a la Industria [Span.]
<i>Instrums Control Syst.</i> .. .. .	Instruments & Control Systems [Eng.]
<i>Int. J. appl. Radiat. Isotopes</i> .. .. .	International Journal of Applied Radiation and Isotopes [Eng., Ger.]
<i>Int. Sug. J.</i> .. .. .	International Sugar Journal [Eng.]
<i>Israel J. Chem.</i> .. .. .	Israel Journal of Chemistry [Eng.]
<i>Ital. J. Biochem.</i> .. .. .	Italian Journal of Biochemistry [Eng.]
<i>Izv. Akad. Nauk kazakh. SSR, Ser. khim. Nauk</i> .. .. .	Izvestiya Akademii Nauk Kazakhskoi SSR, Seriya Khimicheskaya [Russ.]
<i>Izv. Akad. Nauk SSSR, Ser. khim.</i> .. .. .	Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya [Russ.]
<i>Izv. sib. Otdel. Akad. Nauk SSSR</i> .. .. .	Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR [Russ.]
<i>Izv. tomsk. politekh. Inst.</i> .. .. .	Izvestiya Tomskogo Politeknicheskogo Instituta imeni S.M. Kirova [Russ.]
<i>Izv. vÿssh. ucheb. Zaved., Khim. khim. Tekhnol.</i> .. .. .	Izvestiya Vÿsshikh Uchebnÿkh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya [Russ.]
<i>J. agric. Fd Chem.</i> .. .. .	Journal of Agricultural and Food Chemistry [Eng.]
<i>J. Air Pollut. Control Ass.</i> .. .. .	Journal of the Air Pollution Control Association [Eng.]
<i>J. Am. Oil Chem. Soc.</i> .. .. .	Journal of the American Oil Chemists' Society [Eng.]
<i>J. Am. Wat. Wks Ass.</i> .. .. .	Journal of the American Water Works Association [Eng.]
<i>Japan Analyst</i> .. .. .	Japan Analyst [Jap.]
<i>J. appl. Chem., Lond.</i> .. .. .	Journal of Applied Chemistry [Eng.]
<i>J. appl. Phys.</i> .. .. .	Journal of Applied Physics [Eng.]
<i>J. Ass. off. analyt. Chem.</i> .. .. .	Journal of the Association of Official Analytical Chemists [Eng.]
<i>J. Ass. publ. Analysts</i> .. .. .	Journal of the Association of Public Analysts [Eng.]
<i>J. biol. Chem.</i> .. .. .	Journal of Biological Chemistry [Eng.]
<i>J. chem. Educ.</i> .. .. .	Journal of Chemical Education [Eng.]
<i>J. chem. Soc.</i> .. .. .	Journal of the Chemical Society [London] [Eng.]
<i>J. chem. Soc. Japan, ind. Chem. Sect.</i> .. .. .	Journal of the Chemical Society of Japan, Industrial Chemistry Section [Jap.]
<i>J. chem. Soc. Japan, pure Chem. Sect.</i> .. .. .	Journal of the Chemical Society of Japan, Pure Chemistry Section [Jap.]
<i>J. Chin. chem. Soc., Taipei</i> .. .. .	Journal of the Chinese Chemical Society [Eng.]
<i>J. Chromat.</i> .. .. .	Journal of Chromatography [Eng., Fr., Ger.]
<i>J. Dairy Sci.</i> .. .. .	Journal of Dairy Science [Eng.]
<i>J. electroanalyt. Chem.</i> .. .. .	Journal of Electroanalytical Chemistry [Eng.]
<i>J. electrochem. Soc.</i> .. .. .	Journal of the Electrochemical Society [New York] [Eng.]
<i>Jena Rev.</i> .. .. .	Jena Review [Eng.]
<i>J. Endocr.</i> .. .. .	Journal of Endocrinology [Eng.]
<i>Jernkont. Annlv</i> .. .. .	Jernkontorets Annaler [Swed.]
<i>J. Fd Sci.</i> .. .. .	Journal of Food Science [Eng.]
<i>J. forens. Sci.</i> .. .. .	Journal of Forensic Sciences, U.S.A. [Eng.]
<i>J. forens. Sci. Soc.</i> .. .. .	Journal of the Forensic Science Society, U.K. [Eng.]
<i>J. Gas Chromat.</i> .. .. .	Journal of Gas Chromatography [Eng.]
<i>J. Indian chem. Soc.</i> .. .. .	Journal of the Indian Chemical Society [Eng.]
<i>J. inorg. Nucl. Chem.</i> .. .. .	Journal of Inorganic & Nuclear Chemistry [Eng.]
<i>J. Inst. Brew.</i> .. .. .	Journal of the Institute of Brewing [Eng.]
<i>J. Inst. Fuel</i> .. .. .	Journal of the Institute of Fuel [Eng.]
<i>J. Inst. Metals</i> .. .. .	Journal of the Institute of Metals [Eng.]
<i>J. Inst. Petrol.</i> .. .. .	Journal of the Institute of Petroleum [Eng.]
<i>J. Iron Steel Inst.</i> .. .. .	Journal of the Iron and Steel Institute [Eng.]
<i>J. Lab. clin. Med.</i> .. .. .	Journal of Laboratory and Clinical Medicine [Eng.]
<i>J. labelled Compounds</i> .. .. .	Journal of Labelled Compounds [Eng., Fr., Ger.]

<i>J. Lipid Res.</i> .. ..	..	..	Journal of Lipid Research [Eng.]
<i>Jl S. Afr. Inst. Min. Metall.</i> .. ..	..	..	Journal of the South African Institute of Mining and Metallurgy [Eng.]
<i>J. Oil Colour chem. Ass.</i> .. ..	..	..	Journal of the Oil and Colour Chemists' Association [Eng.]
<i>J. opt. Soc. Am.</i> .. ..	..	..	Journal of the Optical Society of America [Eng.]
<i>J. Paint Technol.</i> .. ..	..	..	Journal of Paint Technology [Eng.]
<i>J. Pharm. Belg.</i> .. ..	..	..	Journal de Pharmacie de Belgique [Fr.]
<i>J. Pharm. Pharmac.</i> .. ..	..	..	Journal of Pharmacy and Pharmacology [Eng.]
<i>J. pharm. Sci.</i> .. ..	..	..	Journal of Pharmaceutical Sciences [Eng.]
<i>J. pharm. Soc. Japan</i> .. ..	..	..	Journal of the Pharmaceutical Society of Japan [Jap.]
<i>J. polarogr. Soc.</i> .. ..	..	..	Journal of the Polarographic Society [Eng.]
<i>J. Polym. Sci., A</i> .. ..	..	..	Journal of Polymer Science
<i>J. prakt. Chem.</i> .. ..	..	..	Journal für praktische Chemie [Ger.]
<i>J. Proc. Instn Chem. India</i> .. ..	..	..	Journal and Proceedings of the Institution of Chemists [Eng.]
<i>J. radioanalyt. Chem.</i> .. ..	..	..	Journal of Radioanalytical Chemistry [Eng., Fr., Ger.]
<i>J. Res. natn. Bur. Stand.</i> .. ..	..	..	Journal of Research of the National Bureau of Standards [Eng.]
<i>J. scient. Instrum. (J. Phys., E)</i> .. ..	..	..	Journal of Scientific Instruments (Journal of Physics E) [Eng.]
<i>J. Sci. Fd Agric.</i> .. ..	..	..	Journal of the Science of Food and Agriculture [Eng.]
<i>J. Soc. cosmet. Chem.</i> .. ..	..	..	Journal of the Society of Cosmetic Chemists [Eng.]
<i>J. Soc. Leath. Trades Chem.</i> .. ..	..	..	Journal of the Society of Leather Trades' Chemists [Eng.]
<i>J. Wat. Pollut. Control Fed.</i> .. ..	..	..	Journal of the Water Pollution Control Federation [Eng.]

<i>Kemija Ind.</i> .. ..	..	..	Kemija u Industriji [Serbo-Croat]
<i>Klin. Wschr.</i> .. ..	..	..	Klinische Wochenschrift [Ger.]
<i>Kunststoff-Rdsch.</i> .. ..	..	..	Kunststoff-Rundschau [Ger.]

<i>Lab. Delo</i> .. ..	..	..	Laboratornoe Delo [Russ.]
<i>Lab. Pract.</i> .. ..	..	..	Laboratory Practice [Eng.]
<i>Lancet</i> .. ..	..	..	Lancet [Eng.]
<i>Lipids</i> .. ..	..	..	Lipids [Eng.]
<i>Lloydia</i> .. ..	..	..	Lloydia [Eng.]

<i>Magy. kém. Foly.</i> .. ..	..	..	Magyar Kémiai Folyóirat [Hung.]
<i>Magy. Kém. Lap.</i> .. ..	..	..	Magyar Kémikusok Lapja [Hung.]
<i>Mater. Res. Stand.</i> .. ..	..	..	Materials Research and Standards [Eng.]
<i>Meddår norsk farm. Selsk.</i> .. ..	..	..	Meddelelser fra Norsk Farmaceutisk Selskap [Eng., Ger.]
<i>Metal Finish.</i> .. ..	..	..	Metal Finishing [Eng.]
<i>Metalloberfläche</i> .. ..	..	..	Metalloberfläche [Ger.]
<i>Metallurgia</i> .. ..	..	..	Metallurgia, Manchester, U.K. [Eng.]
<i>Metallurgia ital.</i> .. ..	..	..	Metallurgia Italiana [Ital.]
<i>Mfg Chem.</i> .. ..	..	..	Manufacturing Chemist [Eng.]
<i>Mh. Chem.</i> .. ..	..	..	Monatshefte für Chemie und verwandte Teile anderer Wissenschaften [Ger.]

<i>Microchem. J.</i> .. ..	..	..	Microchemical Journal [Eng.]
<i>Mikrochim. Acta</i> .. ..	..	..	Mikrochimica Acta [Eng., Fr., Ger.]
<i>Misc. Publs natn. Bur. Stand.</i> .. ..	..	..	Miscellaneous Publications. National Bureau of Standards [Eng.]

<i>Mitt. Geb. Lebensmittelunters. u. Hyg.</i> .. ..	..	..	Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene [Ger.]
---	----	----	--

<i>Mitt. Rebe Wein, Obstb. Fruchtverwert.</i> .. ..	..	..	Mitteilungen (Klosterneuberg). Rebe und Wein, Obstbau und Fruchtverwertung [Ger.]
---	----	----	---

<i>Mschr. Brau.</i> .. ..	..	..	Monatsschrift für Brauerei [Ger.]
---------------------------	----	----	-----------------------------------

<i>Nahrung</i> .. ..	..	..	Nahrung [Ger.]
<i>Nature, Lond.</i> .. ..	..	..	Nature [Eng.]
<i>Naturwissenschaften</i> .. ..	..	..	Naturwissenschaften [Eng., Ger.]
<i>Nauch. Trudy tashkent. Univ.</i> .. ..	..	..	Nauchnye Trudy Tashkentского Universitet [Russ.]
<i>Neftekhimiya</i> .. ..	..	..	Neftekhimiya [Russ.]
<i>Neth. Milk Dairy J. [Ned. Melk- en Zuiveltijdschr.]</i> .. ..	..	..	Netherlands Milk and Dairy Journal [English translation of Nederlandsch Melk- en Zuiveltijdschrift]
<i>Neue Hütte</i> .. ..	..	..	Neue Hütte [Ger.]
<i>Nukleonika</i> .. ..	..	..	Nukleonika [Pol.]
<i>N.Z. Jl Sci.</i> .. ..	..	..	New Zealand Journal of Science [Eng.]

<i>Off. Dig. J. Paint Technol. Engng</i> .. ..	..	..	Official Digest, Journal of Paint Technology and Engineering [Eng.]
--	----	----	---

<i>Optics Spectrosc. [Optika Spektrosk.]</i> .. ..	..	..	Optics and Spectroscopy [English translation of Optika i Spektroskopiya]
--	----	----	--

<i>Papier, Darmstadt</i> .. ..	..	..	Papier [Ger.]
<i>Path. Biol., Paris</i> .. ..	..	..	Pathologie et Biologie [Fr.]
<i>Peint.-Pigm.-Vern.</i> .. ..	..	..	Peintures-Pigments-Vernis [Fr.]
<i>Perfum. essent. Oil Rec.</i> .. ..	..	..	Perfumery and Essential Oil Record [Eng.]
<i>Periodica polytech.</i> .. ..	..	..	Periodica Polytechnica [Eng., Ger.]
<i>Pharm. Acta Helv.</i> .. ..	..	..	Pharmaceutica Acta Helveticae [Eng., Fr., Ger.]
<i>Pharmazie</i> .. ..	..	..	Pharmazie [Ger.]

<i>Pharm. J.</i> .. .. .	Pharmaceutical Journal [Eng.]
<i>Pharm. Weekbl. Ned.</i> .. .. .	Pharmaceutisch Weekblad voor Nederland [Dutch, Eng., Ger.]
<i>Pharm. Zentralhalle Dtl.</i> .. .. .	Pharmazeutische Zentralhalle für Deutschland [Ger.]
<i>Photoelect. Spectrom. Grp Bull.</i> .. .. .	Photoelectric Spectrometry Group Bulletin [Eng.]
<i>Plaste Kautsch.</i> .. .. .	Plaste und Kautschuk [Ger.]
<i>Plast. Massy</i> .. .. .	Plasticheskie Massy [Russ.]
<i>Plating</i> .. .. .	Plating [Eng.]
<i>Pochvovedenie</i> .. .. .	Pochvovedenie [Russ.]
<i>Powder Technol.</i> .. .. .	Powder Technology [Eng.]
<i>Pracovní Léh.</i> .. .. .	Pracovní Lékařství [Czech, Slovak]
<i>Pr. Instv. Minist. Hutn.</i> .. .. .	Prace Instytutów Ministerstwa Hutnictwa [Pol.]
<i>Proc. Am. Soc. Brew. Chem.</i> .. .. .	Proceedings of the American Society of Brewing Chemists [Eng.]
<i>Proc. Indian Acad. Sci.</i> .. .. .	Proceedings of the Indian Academy of Sciences [Eng.]
<i>Proc. Soc. analyt. Chem.</i> .. .. .	Proceedings of the Society for Analytical Chemistry [Eng.]
<i>Prof. Pap. U.S. geol. Surv.</i> .. .. .	Professional Papers. United States Geological Survey [Eng.]
<i>Prům. Potravín</i> .. .. .	Průmysl Potravín [Czech, Slovak]
<i>Pure appl. Chem.</i> .. .. .	Pure and Applied Chemistry [Eng., Fr., Ger.]
<i>Pyrethrum Post</i> .. .. .	Pyrethrum Post [Eng., Fr.]
<i>Quím. Ind., Bilbao</i> .. .. .	Química e Industria [Span.]
<i>Radiochim. Acta</i> .. .. .	Radiochimica Acta [Eng., Fr., Ger.]
<i>Radiokhimiya</i> .. .. .	Radiokhimiya [Russ.]
<i>Rapp. CEA</i> .. .. .	Rapport. Commissariat à l'Énergie Atomique [Fr.]
<i>Rass. chim.</i> .. .. .	Rassegna Chimica [Ital.]
<i>Recl Trav. chim. Pays-Bas Belg.</i> .. .. .	Recueil des Travaux Chimiques des Pays-Bas et de la Belgique [Eng.]
<i>Rep. atom. Energy Commn U.S.</i> .. .. .	Report. Atomic Energy Commission, United States [Eng.]
<i>Rep. Invest. U.S. Bur. Mines</i> .. .. .	Report of Investigations. United States Bureau of Mines [Eng.]
<i>Rep. U.K. atom. Energy Auth.</i> .. .. .	Report. United Kingdom Atomic Energy Authority [Eng.]
<i>Rev. Coal Tar Technol.</i> .. .. .	Review of Coal Tar Technology [Eng.]
<i>Rev. scient. Instrum.</i> .. .. .	Review of Scientific Instruments [Eng.]
<i>Revta Agroquím. Tecnol. Aliment.</i> .. .. .	Revista de Agroquímica y Tecnología de Alimentos [Span.]
<i>Revta Assoc. bioquím. argent.</i> .. .. .	Revista de la Asociación Bioquímica Argentina [Span.]
<i>Revta Chim.</i> .. .. .	Revistă de Chimie [Rom.]
<i>Revta Ciencia apl.</i> .. .. .	Revista de Ciencia Aplicada [Span.]
<i>Revta Fac. Farm. Bioquím., Univ. S Paulo</i> .. .. .	Revista da Faculdade de Farmácia e Bioquímica da Universidade de São Paulo [Port.]
<i>Revta Metal.</i> .. .. .	Revista de Metalurgia [Span.]
<i>Revta port. Quím.</i> .. .. .	Revista Portuguesa de Química [Port., Span.]
<i>Revta Soc. quím. Méx.</i> .. .. .	Revista. Sociedad química de México [Span.]
<i>Revta Univ. ind. Santander</i> .. .. .	Revista de la Universidad Industrial de Santander [Span.]
<i>Revue roum. Chim.</i> .. .. .	Revue Roumaine de Chimie [Eng., Fr., Ger.]
<i>Ricerca scient.</i> .. .. .	Ricerca Scientifica [Ital.]
<i>Riechststoffe Arom. Körperpflegemittel</i> .. .. .	Riechststoffe, Aromen, Körperpflegemittel [Ger.]
<i>Riv. ital. Sostanze grasse</i> .. .. .	Rivista Italiana delle Sostanze Grasse [Ital.]
<i>Roczn. Chem.</i> .. .. .	Roczniki Chemii [Eng., Fr., Ger., Pol.]
<i>Roczn. państ. Zakt. Hig.</i> .. .. .	Rocznik Państwowego Zakładu Higieny [Pol.]
<i>Ropa Uhlie</i> .. .. .	Ropa a Uhlie [Czech, Slovak]
<i>S. Afr. J. agric. Sci.</i> .. .. .	South African Journal of Agricultural Science [Afrik., Eng.]
<i>Sb. Trud. tsent. nauchno-issled. Inst. chern. Metall.</i> .. .. .	Sbornik Trudov Tsentral'nogo nauchno-issledovatel'skogo Instituta chernoi Metallurgii [Russ.]
<i>Scand. J. clin. Lab. Invest.</i> .. .. .	Scandinavian Journal of Clinical & Laboratory Investigation [Eng.]
<i>Science, N.Y.</i> .. .. .	Science [Eng.]
<i>Scientia pharm.</i> .. .. .	Scientia Pharmaceutica [Ger.]
<i>Sci. Tools</i> .. .. .	Science Tools [Eng.]
<i>Sepr Sci.</i> .. .. .	Separation Science [Eng.]
<i>Soap chem. Spec.</i> .. .. .	Soap and Chemical Specialties [Eng.]
<i>Soil Sci.</i> .. .. .	Soil Science [Eng.]
<i>Spectrochim. Acta</i> .. .. .	Spectrochimica Acta [Eng., Ger.]
<i>Spectrosc. Lett.</i> .. .. .	Spectroscopy Letters [Eng.]
<i>Spectrovision</i> .. .. .	Spectrovision [Eng.]
<i>Stärke</i> .. .. .	Stärke [Ger.]
<i>Staub, Reinhalt Luft</i> .. .. .	Staub, Reinhaltung der Luft [Ger.]
<i>Steroids</i> .. .. .	Steroids [Eng.]
<i>Studia Univ. Babeş-Bolyai</i> .. .. .	Studia Universitatis Babeş-Bolyai [Rom.]
<i>Studii Cerc. Chim.</i> .. .. .	Studii şi Cercetări de Chimie [Rom.]
<i>Studii Cerc. Fiz.</i> .. .. .	Studii şi Cercetări de Fizică [Rom.]
<i>Svensk PappTidn.</i> .. .. .	Svensk Papperstidning [Eng., Ger.]
<i>Talanta</i> .. .. .	Talanta [Eng., Fr., Ger.]
<i>TAPPI</i> .. .. .	Journal of the Technical Association of the Pulp and Paper Industry [Eng.]



<i>Technology, Sindri</i> .. .. .	<i>Technology [Eng.]</i>
<i>Tenside</i> .. .. .	<i>Tenside [Ger.]</i>
<i>Tidsskr. Kjemi Bergv. Metall.</i> .. .. .	<i>Tidsskrift for Kjemi, Bergvesen og Metallurgi [Nor.]</i>
<i>Trans. Br. ceram. Soc.</i> .. .. .	<i>Transactions of the British Ceramic Society [Eng.]</i>
<i>Trans. Instn Min. Metall.</i> .. .. .	<i>Transactions of the Institution of Mining and Metallurgy [Eng.]</i>
<i>Trav. Soc. Pharm. Montpellier</i> .. .. .	<i>Travaux de la Société de Pharmacie de Montpellier [Fr.]</i>
<i>Trib. CEBEDEAU</i> .. .. .	<i>Tribune du CEBEDEAU [Centre Belge d'Étude et de Documentation des Eaux] [Fr.]</i>
<i>Trudy Khim. khim. Tekhnol. [Gor'ki]</i> .. .. .	<i>Trudy po Khimii i Khimicheskoi Tekhnologii [Russ.]</i>
<i>Trudy Kom. analit. Khim.</i> .. .. .	<i>Trudy Komissii po Analiticheskoi Khimii [Russ.]</i>
<i>Trudy mosh. khim.-tekhnol. Inst.</i> .. .. .	<i>Trudy Moskovskogo Khimiko-Tekhnologicheskogo Instituta imeni D. I. Mendeleeva [Russ.]</i>
<i>Trudy vses. nauchno-issled. Inst. khim. Reakt.</i> .. .. .	<i>Trudy Vsesoyuznogo Nauchno-Issledovatel'skogo Instituta khimicheskikh Reaktivov [Russ.]</i>
<i>Uchen. Zap. azerb. gos. Univ., Ser. khim. Nauk</i> .. .. .	<i>Uchenye Zapiski Azerbaidzhanskogo Gosudarstvennogo Universiteta, Seriya Khimicheskikh Nauk [Russ.]</i>
<i>Uchen. Zap. latv. gos. Univ.</i> .. .. .	<i>Uchenye Zapiski Latvinskogo Gosudarstvennogo Universiteta [Russ.]</i>
<i>Uchen. Zap. perm. gos. Univ.</i> .. .. .	<i>Uchenye Zapiski Permskogo Gosudarstvennogo Universiteta [Russ.]</i>
<i>Ukr. biokhim. Zh.</i> .. .. .	<i>Ukrainskii Biokhimicheskii Zhurnal [Russ.]</i>
<i>Ukr. khim. Zh.</i> .. .. .	<i>Ukrainskii Khimicheskii Zhurnal [Russ.]</i>
<i>Uzbek. khim. Zh.</i> .. .. .	<i>Uzbekskii Khimicheskii Zhurnal [Russ.]</i>
<i>Vest. leningr. gos. Univ., Ser. Fiz. Khim.</i> .. .. .	<i>Vestnik Leningradskogo Gosudarstvennogo Universiteta, Seriya Fiziki i Khimii [Russ.]</i>
<i>Vest. mosh. gos. Univ., Ser. khim.</i> .. .. .	<i>Vestnik Moskovskogo Gosudarstvennogo Universiteta, Seriya Khimiya [Russ.]</i>
<i>Wat. Res.</i> .. .. .	<i>Water Research [Eng.]</i>
<i>Wat. Sewage Wks</i> .. .. .	<i>Water &amp; Sewage Works [Eng.]</i>
<i>Z. analyt. Chem.</i> .. .. .	<i>Zeitschrift für analytische Chemie [Eng., Ger.]</i>
<i>Z. anorg. allg. Chem.</i> .. .. .	<i>Zeitschrift für anorganische und allgemeine Chemie [Ger.]</i>
<i>Zav. Lab.</i> .. .. .	<i>Zavodskaya Laboratoriya [Russ.]</i>
<i>Z. Chemie, Lpz.</i> .. .. .	<i>Zeitschrift für Chemie [Ger.]</i>
<i>Z. Erzbergb. MetallhüttWes.</i> .. .. .	<i>Zeitschrift für Erzbergbau und Metallhüttenwesen [Ger.]</i>
<i>Zh. analit. Khim.</i> .. .. .	<i>Zhurnal Analiticheskoi Khimii [Russ.]</i>
<i>Zh. neorg. Khim.</i> .. .. .	<i>Zhurnal Neorganicheskoi Khimii [Russ.]</i>
<i>Zh. prikl. Khim., Leningr.</i> .. .. .	<i>Zhurnal Prikladnoi Khimii [Russ.]</i>
<i>Zh. prikl. Spektrosk.</i> .. .. .	<i>Zhurnal Prikladnoi Spektroskopii [Russ.]</i>
<i>Z. klin. Chem.</i> .. .. .	<i>Zeitschrift für klinische Chemie [Ger.]</i>
<i>Z. Lebensmittelunters. u. -Forsch.</i> .. .. .	<i>Zeitschrift für Lebensmittel-Untersuchung und -Forschung [Ger.]</i>

## ACKNOWLEDGEMENTS

The organisations publishing the following journals, or their own abstracts, are thanked for allowing reproduction of some abstracts.

Abstract Bulletin of the Institute of Paper Chemistry  
 Aluminium Abstracts  
 British Ceramic Abstracts  
 Chemical Abstracts  
 Fuel Abstracts and Current Titles  
 International Sugar Journal  
 Metals Abstracts  
 Nuclear Science Abstracts  
 Nutrition Abstracts and Reviews  
 Referativnyi Zhurnal, Biologicheskaya Khimiya, Section 30F  
 Referativnyi Zhurnal, Khimiya, Section 19GD  
 Rubbers: RAPRA Abstracts [Rubber and Plastics Research Association of Great Britain Abstracts]  
 Water Pollution Abstracts  
 Welwyn Digest [Welwyn Hall Research Association Abstracts]  
 World Surface Coatings Abstracts  
 World Textile Abstracts

# ABBREVIATIONS

Certain abbreviations in everyday use are not included in the following list. When any doubt might arise from the use of an abbreviation or symbol the word is printed in full.

alternating current . . . . .	a.c.	minute (time) . . . . .	min.
ampere . . . . .	amp.	molar (concentration) . . . . .	M
Ångström unit . . . . .	Å	molecul-e, -ar . . . . .	mol.
aqueous . . . . .	aq.	nanogram . . . . .	ng
centimetre . . . . .	cm	nanometre (not millimicron) . . . . .	nm (not mμ)
Colour Index (2nd Edition) . . . . .	C.I.	nicotinamide-adenine dinucleotide . . . . .	NAD (not DPN)
concentrated . . . . .	conc.	nicotinamide-adenine dinucleotide phosphate . . . . .	NADP (not TPN)
concentration . . . . .	concn.	normal (concentration) . . . . .	N
current density . . . . .	c.d.	nuclear magnetic resonance . . . . .	NMR
density, relative . . . . .	d or wt. per ml	optical rotation . . . . .	α
deoxyribonucleic acid . . . . .	DNA	parts per million . . . . .	p.p.m.
dihydropyridine-adenine dinucleotide . . . . .	NADH <sub>2</sub> (not DPNH)	per cent. . . . .	%
dilute (as adjective) . . . . .	dil.	per cent. (vol. in vol.) . . . . .	% (v/v)
direct current . . . . .	d.c.	per cent. (wt. in vol.) . . . . .	% (w/v)
electron volt . . . . .	eV	per cent. (wt. in wt.) . . . . .	% (w/w)
ethylenediaminetetra-acetate . . . . .	EDTA	poly(tetrafluoroethylene) . . . . .	PTFE
gas - liquid chromatography . . . . .	GLC	potential difference . . . . .	p.d.
gas - solid chromatography . . . . .	GSC	precipitate (as a noun) . . . . .	ppt.
gram . . . . .	g	precipitated . . . . .	pptd.
gram-molecule . . . . .	mole	precipitating . . . . .	pptg.
half-wave potential . . . . .	E <sub>1/2</sub>	precipitation . . . . .	pptn.
infra-red . . . . .	i.r.	refractive index . . . . .	n <sub>D</sub>
insoluble . . . . .	insol.	relative band speed . . . . .	R <sub>F</sub>
international unit . . . . .	i.u.	revolutions per minute . . . . .	r.p.m.
ionic strength . . . . .	I	ribonucleic acid . . . . .	RNA
kilogram . . . . .	kg	saponification value . . . . .	sap. val.
kilovolt . . . . .	kV	saturated calomel electrode . . . . .	S.C.E.
kilowatt . . . . .	kW	second (time) . . . . .	sec.
maxim-um, -a . . . . .	max.	soluble . . . . .	sol.
microgram . . . . .	μg (not γ)	solution . . . . .	soln.
microlitre . . . . .	μl	specific rotation . . . . .	[α] <sub>D</sub> <sup>20</sup>
micrometre (not micron) . . . . .	μm (not μ)	square centimetre . . . . .	sq. cm
micromole . . . . .	μmole	standard temp. and pressure . . . . .	s.t.p.
milliampere . . . . .	mA	thin-layer chromatography . . . . .	TLC
millicurie . . . . .	mC	ultra-violet . . . . .	u.v.
milli-equivalent . . . . .	milli-equiv.	unit of pressure (mm Hg) . . . . .	torr
milligram . . . . .	mg	volt . . . . .	V
millilitre . . . . .	ml	watt . . . . .	W
millimetre . . . . .	mm	weight . . . . .	wt.
millimolar . . . . .	mM		
millivolt . . . . .	mV		

In addition, the following symbols may be used in conjunction with numerical values or in mathematical expressions—

greater than . . . . .	>	less than . . . . .	<
is proportional to . . . . .	∝	of the order of, approximately . . . . .	≈

Abbreviations of journal titles used in the abstracts are, in general, those of the 'World List of Scientific Periodicals' (4th edn, 1964, Butterworths, London).

The language in which an original paper is written is English unless otherwise specified.

The chemical nomenclature used in the abstracts is that recommended by The Chemical Society ('Handbook for Chemical Society Authors,' The Chemical Society, London, 1961), and may differ from that used in the original articles.

When possible, drugs are specified by their official B.P. or B.P.C. names, or by the Approved Names recommended by the British Pharmacopoeia Commission (8 Bulstrode Street, London, W1M 5FT).

The principal Pharmacopoeias are denoted by B.P., U.S.P. or D.A.B., together with the identifying roman numeral or year.

The names given to enzymes are those recommended by the International Union of Biochemistry ('Enzyme Nomenclature,' Elsevier Publishing Co., London, 1965).

Pesticides are named in accordance with the British Standard 1831 : 1969, 'Recommended Common Names for Pesticides' (British Standards Institution, 2 Park St., London, W1Y 4AA).



# ANALYTICAL ABSTRACTS

PUBLISHED BY

The Society for Analytical Chemistry

---

INDEX TO VOLUME 16

1969

---



# INDEX OF AUTHORS

## A

- Abd-El-Nabey, B. A. See Issa, R. M., 123.
- Abdel Razik, F. A. See Alimarin, I. P., 2384.
- Abdullaeva, Kh. S. See Pogornova, V. S., 1169, 2915.
- Abe, Y. See Vioque, E., 1553.
- Abel, E. See Mayer, J., 117.
- Abelson, D. M. Double-path quartz micro-cell for solutions of unknown extinction, 474. Sensitive ultra-violet scanner for paper chromatograms, 1631.
- Abernethy, R. F., and Gibson, F. H. Determination of trace amounts of fluorine in coal, 692.
- Abou-Elnaga, M. A. See Elbeih, I. I. M., 141.
- Abowitz, G., and Ladell, J. Low-temperature automated single-crystal diffractometry, 2812.
- Abrahams, D. E. See Wood, T., 2026.
- Abrahamsson, S. Use of computers in low-resolution mass spectrometry, 1679.
- Abramova, E. L. See Talipova, L. L., 1259.
- Abramowitz, A. See Guroff, G., 906.
- Abramyan, A. A., and Megroyan, R. A. Simultaneous micro-determination of carbon, halogens and sulphur in organic compounds, 3049. Simultaneous micro-determination of carbon, hydrogen, mercury and chlorine or bromine in organic compounds, 3050.
- Ackermann, G., and Angermann, W. Spectrophotometric determination of copper with 6,7-dihydro-5,8-dimethyldibenzox [b] [1,10]-phenanthroline, 1775.
- and Frey, H.-P. Comparison between quartz powder and silica gel as supports in TLC, 2. Determination of the exchange capacity of chromatographic papers, 431. Ion-exchange behaviour of paper in inorganic paper chromatography, 1113.
- and Mende, A. Volumetric determination of phosphite and hypophosphite present together, 101.
- and Weber, E. Radiometric evaluation of paper chromatograms, 2. Paper chromatography of inactive substances by radioactive additions. I. Sulphates and thiosulphates, 1846.
- and Wiesner, H.-J. Limits of error in the direct photometry of paper chromatograms, 2.
- See also Michal, J., 2.
- Ackermann, H. See Führer, G., 1559.
- Ackman, R. G., and Castell, J. D. Study of the effect of structure and other factors in open-tubular GLC of monoenoic fatty acid isomers on a polyester stationary phase, 393.
- Acosta, J. J. C. See Chiang Acosta, J. J.
- Aclair, R. K. See Stefanski, R. J., 1676.
- Adamczewski, B. See Żurawski, P., 3215.
- Adamiec, I. Spectrophotometric determination of bismuth in copper and nickel with xylenol orange, 2886.
- Adamović, V. M. See Šibalić, S. M., 955.
- Adams, F. See Boeck, R. de, 621.
- Adams, J. A. See Knauff, R. E., 2084.
- Adams, N. I., III. See Barrett, J. J., 3323.
- Adams, O. Bakeable quartz - metal sealed window: criticism on terminology, 1665.
- Adams, R. N. See Marcoux, L. S., 1684.
- Adamski, R., and Bitner, J. TLC of cinchona alkaloids, 3196.
- and Pawełczyk, K. Paper chromatography and TLC of decomposition products of amidopyrine in aqueous solution, 3216.
- Addanki, S., Cahill, F. D., and Sotos, J. F. Determination of extracellular space with tritium-labelled inulin, 792.
- Adil, A. S. See Hashmi, M. H., 924.
- Adler, Yu. P. See Markova, E. V., 4.
- Adorova, I. V., Kovner, V. Ya., and Siling, M. I. TLC and paper chromatography of reaction mixtures and products of the condensation of phenol with formaldehyde, 2577.
- See also Kovner, V. Ya., 2580.
- Adriaenssens, K., Vanheule, R., Karcher, D., and Mardens, Y. Screening methods for the study of amino-acids in tissues by using frozen slices, 2077.
- Afanasyev, S. K., and Smachnaya, V. F. Separation of antimony<sup>III</sup> sulphide and antimony<sup>III</sup> oxide with hydrochloric acid, 2974.
- Affonso, A. Electrophoresis on plaster of Paris, 1651.
- Afonin, V. P., Losev, N. F., and Shalaginov, A. I. Optimum earthing of X-ray tube electrodes in X-ray fluorescence determination of elements of small atomic number, 2815.
- Agafonov, I. L., Runovskaya, I. V., and Boiko, O. S. Mass-spectrometric analysis for traces of boron compounds in silane by isotope dilution, 2942.
- See also Devyat'ikh, G. G., 2943.
- Agafonova, V. I., and Ryazanov, I. P. Gravimetric determination of bismuth after precipitation as a basic salt with diphenic acid, 2981.
- Agahigian, G., Plant, H., Vickers, G. D., and Van der Veen, J. NMR spectrometry of methylindanol-ones, 486.
- Agasyan, L. B., Nikolaeva, E. R., and Agasyan, P. K. Coulometric determination of selenium<sup>IV</sup> or tellurium<sup>IV</sup>, or both, with electrogenerated titanium<sup>III</sup>, 643.
- Nikolaeva, E. R., Agasyan, P. K., and Lebedeva, Z. M. Coulometric titration of selenium<sup>IV</sup> and tellurium<sup>IV</sup> with electrolytically generated tin<sup>II</sup>, 1234.
- See also Agasyan, P. K., 2442.
- Agasyan, P. K., Denisova, A. N., Agasyan, L. B., and Nikolaeva, E. R. Coulometric determination of selenium<sup>IV</sup> and tellurium<sup>IV</sup> with potassium permanganate and electrogenerated iron<sup>II</sup>, 2442.
- See also Agasyan, L. B., 643, 1234.
- Agee, J. E., and Roth, J. A. Solvent extraction of trans-uranium elements, 1816.
- Aggarwal, J. S. See Murthy, B. G. K., 3117.
- Agneray, L. See Clayer, A., 3.
- Aguilá, J. F. Fluorescent indicators, derived from substituted coumarins, for aluminium, 71.
- Agwu, I. U., and Glenn, A. L. Use of ratio of orthogonal function coefficients as an index of purity, 1662.
- Ahlberg, C. D. See Vogel, W. H., 2068.
- Ahmad, N. See Khan, Mohammad, A., 2501.
- Ahmed, M. S. A., and Vahman, M. Separation of complex mixtures of paraffins and olefins by elution - adsorption chromatography, 2558.
- Ahuja, S. Paper-chromatographic assay of guaiphenesin in a pharmaceutical formulation, 2703.
- Aikens, D. A. See Van Duyne, R. P., 2276.
- Airey, A. C. See Ruddlesden, S. N., 1294.
- Aitken, R. A., Bruce, A., Harris, J. O., and Seaton, J. C. TLC of beer bittering substances, 970.
- Aivazyán, S. A. Statistical methods in laboratory practice: review, 4.
- Akatsu, E. See Ishimori, Tomitaro, 1734.
- Akent'eva, N. A. See Zhdanov, A. K., 1123, 1754.

- Akhmedli, M. K., and Gambarov, D. G. Determination of scandium by complex formation with methylthymol blue, 2391.
- Akhtar, I. See Qureshi, M., 1112.
- Akhunov, T. F. See Simonov, V. D., 1347.
- Akisue, G. See Wasicky, R., 1492.
- Alam, M. Z. See Shellard, E. J., 2, 3203.
- Al'badri, D. S. See Gibalo, I. M., 111.
- Albasini, A. See Coppini, D., 2195.
- Albert, D. K., and Meyerson, S. Deuterium labelling of undecan-2-one by GLC, 1329.
- Alberti, G. Chromatography on paper impregnated with inorganic ion exchangers. IV. Spot tests for thallium<sup>I</sup>, mercury<sup>I</sup>, silver and caesium after chromatographic separation on ammonium molybdophosphate paper, 552.
- and Allulli, S. Ion exchange in fused salts. III. Preparation, thermal stability and ion-exchange properties of amorphous zirconium phosphate completely converted into the salt form, 2805. Chromatography and electrophoresis of inorganic ions in fused salts: review, 2850.
- Allulli, S., and Palazzeschi, L. Chromatographic and electrophoretic separation on glass-fibre paper of inorganic ions dissolved in fused salts. IV. Electrophoretic behaviour of inorganic ions in fused alkali nitrates, 1114.
- Massucci, M. A., and Torracca, E. Crystalline insoluble salts of polybasic metals. IV. Chromatography of inorganic ions on support-free cerium<sup>IV</sup> phosphate sheets, 27.
- Alekperov, R. A., and Geibatova, S. S. Extraction of rare-earth metals by naphthenic acids, 2399.
- Aleksandrovich-Mel'nikova, A. S., and Zhigalkina, T. S. Use of gallein in complexometric determination of copper, 1774.
- Aleksandrak, V. M., Zhihlinskii, A. G., and Khlopina, T. N. Optimum conditions for spectrometric analysis by the isotope-dilution method, 1670.
- Alekseeva, K. V., and Solomatina, L. S. GLC of the group composition of petrol produced by thermal cracking, 762.
- Alekseeva, T. A., and Bezuglyi, V. D. Polarography of vinyl monomers of the biphenyl series: determination in polymers, 2573.
- Alekseevskaya, N. V. See Lakomkin, I. G., 1155.
- Aleskovskii, V. B., Bystritskii, A. L., and Kokk, Kh. Yu. Determination of chloride in cadmium selenide or sulphide, 2902.
- Alex, W. See Rumpf, H., 1733.
- Alexander, D. E., Silveira, S. L., Collins, F. I., and Rodgers, R. C. Determination of oil in maize by wide-line NMR, 397.
- See also Collins, F. I., 1548.
- Alexander, N. M., and Scheig, R. GLC of the trimethylsilyl derivatives of iodotyrosines and iodothyronines, 2646.
- Alexander, R. B. See Chanin, G., 1021.
- Alexander, T. G. See Martin, E. J., 1, 1528.
- Alexiades, C. A., and Jackson, M. L. Determination of chlorite in clays and mineral deposits, 1291.
- Alfenaar, M., and Ligny, C. L. de. Universal pH scale in methanol and in methanol-water, 1686.
- See also Ligny, C. L. de, 1685.
- Alian, A., and Haggag, A. Extraction of thorium and cerium<sup>III</sup> nitrates with mixtures of neutral solvents, 605.
- Sanad, W., and Khalifa, H. Extraction of elements from aqueous methanol, ethanol or acetone by tridodecylamine and tributyl phosphate, 2858.
- Alian, A. and Shabana, R. Neutron-activation analysis by standard addition and solvent extraction: determination of impurities in thorium nitrate and iron, 2931.
- Shabana, R., Sanad, W., Allam, B., and Khalifa, H. Neutron-activation analysis by standard addition and solvent extraction: determination of traces of antimony in metals and rocks, 2975.
- Alimarin, I. P., Abdel Razik, F. A., Vinogradova, E. N., and Kameney, A. I. Determination of indium in metallic aluminium by amalgam polarography with accumulation, 2384.
- Alishoev, V. B., Berezkin, V. G., Korolev, A. A., and Tutorskii, I. A. GLC of the pyrolysis products of rubber, 1395.
- Berezkin, V. G., and Tatarinskii, V. S. Gas-chromatographic detection of products from liquid chromatography, 2788.
- Allam, B. See Alian, A., 2975.
- Allam, D. S. Sorption of gases by thin films, 2849.
- Allam, S. I. See Hahn, R. B., 1264.
- Allan, P. W. See Tomisek, A. J., 2.
- Allen, H. W. See Jolley, W. B., 1622.
- Allred, R. J., and Keutel, H. J. Micro-slide acrylic amide gel electrophoresis for tissue lactate dehydrogenase, 2665.
- Allulli, S. See Alberti, G., 1114, 2805, 2850.
- Almagro, J. See Sancho, J., 1808.
- Almási, A. See Flóra, T., 728.
- Almeida, A. A. G. de. See Pulido, C., 3275.
- Almeida, M. C. M. de. See Pulido, C., 3275.
- Alpar, O. See Güven, K. C., 903.
- Alter, J., Diehlmann, D., Beydatsch, R., Kohler, P., Quaas, D., and Spichale, W. Determination of herbicides and pesticides by combined TLC and X-ray fluorescence spectrometry, 1587.
- Altmann, H., Dolejs, I., and Fetter, F. Separation of nucleic acids on a methylated albumin kieselguhr column, 1471.
- Álvarez Herrero, C. See Burriel-Martí, F., 2432.
- Aly, O. M. TLC of dihydric phenols, 3078.
- Alyamkin, Yu. N. See Simonov, V. D., 1347.
- Al'ybina, A. N. See Arishkevich, A. K., 619.
- Amal, H. See Ates, O., 2158.
- Amano, F. See Kodama, T., 2103.
- Amano, H. See Ishimori, Tomitaro, 1734.
- Amantova, I. A. See Stolyarov, K. P., 543.
- Amanzholova, E. S., and Atchibaev, K. A. Lead amalgam electrode for the potentiometry of lead. I. Titration of lead nitrate with sodium carbonate, 1824.
- Amar, V. K. See Verma, M. R., 730.
- Amati, G. See Sironi, G., 116.
- Amaya, K. [Annual review, 1967]—Thermal analysis, 1734.
- Ambujavalli, S. Spectrophotometric determination of molybdenum in steel, 159.
- Amdisen, A. Serum lithium determinations for clinical use, 797.
- American Society for Testing Materials. Proposed recommended practice for gas-chromatographic terms and relationships, 2262.
- Amis, E. S. See McIntyre, J. M., 1183.
- Amos, R. TLC analysis of lubricating oils. I. Identification of 'bloom' on vulcanisates by TLC, 1396. Determination of 6-t-butyl-2,4-xylene in aviation turbine fuel by TLC, 2555.
- Amsel, G., and Samuel, D. Micro-analysis of stable isotopes of oxygen by means of nuclear reactions, 1224.
- Ana, M.-A. S. See Santa Ana, M.-A.
- Anacker, E. W. See Hoffman, C. S., 218.
- Anders, E. See Heymann, D., 181.



- Anderesen, N. R.**, and **Hume, D. N.** Flame-photo-metric determination of barium and strontium in sea-water, 3279.
- Anderson, N. G.**, and **Rutenberg, E.** Analytical techniques for cell fractions. VII. Simple gradient-forming apparatus, 1034.
- **Waters, D. A.**, **Fisher, W. D.**, **Cline, G. B.**, **Nunley, C. E.**, **Elrod, L. H.**, and **Rankin, C. T., jun.** Analytical techniques for cell fractions. V. Characteristics of the B-XIV and B-XV zonal-centrifuge rotors, 1034.
- See also **Chandler, E. L.**, 1034.
- Anderson, R. E.**, and **Holt, K. E.** Estimation of crude fibre in de-hulled soya beans, 403.
- Anderson, R. G.**, and **Nickless, G.** Co-ordinating properties of some ligand systems related to 4-(2-pyridylazo)resorcinol, 532. Metal complexes of some azo and azomethine dyestuffs. III. Complexes of 2-(2-pyridylazo)phenol and 4-(2-pyridylazo)phenol, 1102. Heterocyclic azo-dye-stuffs in analytical chemistry. I. Ligand properties of 2-(2-pyridylazo)-1-naphthol and its sulphonated analogues, 1738; II. Ligand properties of 2-(2-pyrimidylazo)-1-naphthol and its sulphonated analogues, 1738.
- Andersson, K.**, and **Bergström, J. G. T.** Determination of hydrogen sulphide and sulphur dioxide in waste gases from wood pulp mills, 773.
- Andreeva, I. Yu.** Analysis of aluminium nitride for aluminium, nitrogen, aluminium oxide and chlorine, 1795.
- Andreikova, L. G.**, **Novikov, N. I.**, and **Noskov, V. V.** Use of camphoric acid esters in GLC, 3077.
- Andréu, P.** See **Rosa-Brusin, M.**, 1646.
- Andrew, D.** Cycloidal-path mass spectrometer applied to the measurement of the speed of sputter ion pumps, 2849.
- Andrews, B. R.** See **Regan, A. F.**, 767.
- Andrews, J. F.** Chromatography of gaseous products and reactants for biological processes, 3285.
- Angel, A. C.** Ultrasonic dispersion of barium carbonate labelled with carbon-14 in silica for liquid-scintillation counting, 3350.
- Angeli, A.** See **Gaidano, G.**, 2637.
- Angelidis, O. M.** Data for calculating composition of mixtures of ethanol and water, 3255.
- Angermann, W.** See **Ackermann, G.**, 1775, and **Kässner, B.**, 569.
- Anisimova, G. F.**, **Klimova, V. A.**, **Lavrov, I. A.**, and **Krylova, E. P.** Automated coulometric determination of the moisture in gases and hydrogen in organic substances, 1295.
- Anisimova, L. A.** See **Toropova, V. F.**, 2546.
- Ansell, C.** Spectrographic determination of volatile elements in geological silicates and carbonates by using an argon d.c. arc, 183.
- Anino, J. S.** Sequential sampling system for spectrophotometers, 2300.
- Anorge, S.** Electrophoretic - chromatographic separation and determination of amino-acids, 2642.
- and **Bohley, P.** Paper-chromatographic determination of amino-acids: standardisation of method and of testing new batches of paper, 321.
- Antcliffe, G. A.**, **Einspruch, N. G.**, **Pinatti, D. G.**, and **Rorschach, H. E., jun.** Germanium resistance thermometry at temperatures below 1° K, 3365.
- Anthony, G. D.** See **Garn, P.**, 624.
- Atić-Jovanović, A. M.** See **Markinković, M. D.**, 54.
- Atipova, P. S.** See **Lur'e, Yu. Yu.**, 1020.
- Atkowiak, J. J.** See **Szymanski, H. A.**, 2306.
- Atolík, P.** See **Dušinský, G.**, 1508.
- Anton, A. H.**, and **Sayre, D. F.** Improving the specificity of the nitrosonaphthol procedure for urinary 5-hydroxyindol-3-ylacetic acid, 861.
- Antonenko, N. S.** See **Shuster, Ya. A.**, 3070.
- Antonov, V. N.** See **Kreingold, S. U.**, 3016.
- Ant-Wuorinen, O.**, and **Visapää, A.** Determination of the copper content of cellulose by X-ray fluorescence, 264.
- Anzai, S.** See **Irako, K.**, 3113.
- Aoyama, I.** See **Takahashi, Y.**, 343.
- Apirina, R. M.** See **Vinogradov, A. V.**, 2891.
- Appelqvist, L.-Å.**, and **Josefsson, E.** Determination of isothiocyanates and oxazolidine-2-thiones in digests of seed meals of rape and turnip rape, 989.
- Appleby, A.**, and **Spillett, R. E.** Cerium<sup>IV</sup> - arsenite reaction in micro-determination of iodine for specific-activity measurement, 135.
- Aprison, M. H.** See **Hanig, R. C.**, 795.
- Aragónés-Apodaca, R.** Colorimetric determination of ascorbic acid with iron<sup>III</sup> chloride and bipyridyl, 902. Spectrophotometric determination of dipyrone with iron<sup>III</sup> chloride and bipyridyl, 932.
- Arai, M.** See **Hirata, H.**, 90.
- Arakawa, K.**, and **Tanikawa, K.** Studies of organo-metallic compounds. VI. GLC of metal chelates of hexafluoroacetylacetone, 236.
- Archer, V. S.**, and **Twelves, R. B.** Gravimetric and spectrophotometric determination of hexa-fluoroantimonate with tetraphenylarsonium chloride, nitron or ferroin, 1863.
- Ardell, R. E.** See **Baitsholts, A. D.**, 1050.
- Ardell, H. W.** See **Opel, H.**, 736.
- Argauer, R. J.** Chloroacetylation of microgram amounts of phenols, and detection by electron-capture GLC, 1936.
- Arias, A. C.** See **Charro Arias, A.**
- Ariel, M.** See **Kirowa-Eisner, E.**, 2320.
- Arishkevich, A. M.**, and **Al'ybina, A. N.** Use of dimercaptopyranones for amperometric determination of lead, 619.
- See also **Surmil, A. M.**, 2869.
- Arkima, V.** Quantitative GLC determination of higher aliphatic and aromatic alcohols in beer, 3254.
- See also **Ronkainen, P.**, 972.
- Armistead, C. G.**, **Hambleton, F. H.**, **Hockey, J. A.**, and **Stockton, J. W.** Infra-red cell for studying adsorbed species at the gas - solid interface, 479.
- Arnal, M.** See **Seguin, L.**, 770.
- Arnikar, H. J.**, **Rao, T. S.**, and **Karmarkar, K. H.** Use of an electrodeless discharge as detector in GLC. II. Influence of exciting potential, temperature and volume of discharge on detector sensitivity, 1071.
- Arnott, M. S.**, and **Ward, D. N.** Separation of 5-dimethylaminonaphthalene-1-sulphonyl derivatives of amino-acids in a single analysis, 325.
- Aronina, I. V.** Determination of the base elements and aluminium impurity in Manganin, 2888.
- Aronoff, S.**, and **Suschny, O.** Explanation of size relation between a chromatographic spot and its autoradiogram, 1632.
- Arstamyan, Zh. M.** See **Tarayan, V. M.**, 2362.
- Artyukhin, P. I.**, **Gil'bert, É. N.**, and **Pronin, V. A.** Determination of impurities in iron by neutron activation, 1268. Activation-analysis determination of impurities in certain semiconductor materials, 2331.
- Arx, E. von.** Investigations of solvents, adsorbents and separation chambers for TLC, 2.
- Arzhintar', O. A.** See **Kopanskaya, L. S.**, 2387.



- Asada, E., and Matsuda, S. X-ray fluorescence spectrometric determination of rare-earth metals by a solution method, 80.  
— See also Uchikawa, H., 1734.
- Asahi, Y. See Hattori, T., 1734.
- Ascione, P. P., Zagar, J. B., and Chrekian, G. P. Tetracyclines. I. Separation and examination by TLC, 355; II. Separation and determination by column chromatography, 355.
- Asfeldt, V. H. See Nielsen, E., 849.
- Ashley, R. W. See Bruce, T., 169.
- Ashoor, S. H. M., and Bernhard, R. A. Isolation and characterisation of terpenes from *Citrus reticulata* Blanco and their comparative distribution among other citrus species, 949.
- Ashraf, M. See Headridge, J. B., 1747.
- Askevold, R., and Vøllar, O. D. Determination of iron in serum and other biological materials, 808.
- Askew, J., Mitchell, T. H., Thomson, J., and Wheals, B. B. GLC of organophosphorus pesticides. IV. Effect of cooking on pesticide residues, 2721.
- Aslanov, G. A. See Shakhhtakhtinskii, G. B., 3018.
- Asmus, E., and Baumert, H.-P. Gravimetric determination of phosphorus with *NNN'*-tetrakis-(2-hydroxypropyl)ethylenediammonium dipchlorate, 1206.
- Aspinall, A., Slater, D. N., and Mayes, P. Neutron-activation analysis of mediaeval ceramics, 2492.
- Assendelft, O. W. van, Holtz, A. H., Kampen, E. J. van, and Zijlstra, W. G. Control data of international cyanomethaemoglobin reference solutions, 333.
- Associated Electrical Industries Ltd. Measurement of moisture in transformer oil, 3092.
- Astanina, A. A. Potentiometric determination of nitrogen in metals and alloys, 2423.
- Astanina, L. N., and Yakobson, L. M. Paper-chromatographic separation for detecting penicillin metabolites, 1414.
- Așteleanu, M. See Ceaușescu, D., 2441.
- Asthana, S. S. Determination of total sulphur in coal, 691.
- Astruc, M. See Bonastre, J., 3345.
- Atchibaev, K. A. See Amanzholova, E. S., 1824.
- Ates, O., and Amal, H. Chromatography of some iodinated organic X-ray contrast compounds, 2158.
- Ateya, B. See Khalifa, H., 1149.
- Athavale, V. T., Dhaneshwar, R. G., and Sarang, D. A. Use of the platinum-20% rhodium electrode in potentiometry, 1692.
- Karnik, M. N., Sathe, R. M., Venkatasubramanian, V., and Venkateswarlu, C. Kerosine as a solvent for the separation of palladium from platinum, 684.
- Atkinson, J. W. See Collins, J. C., 2761.
- Aton, G. W. See Firsching, F. H., 1799.
- Atsuya, I. See Gotô, H., 3021.
- Attaway, J. A. Fluorohydrocarbons as solvents for TLC, 1055.
- Aturyan, M. M. See Gaibakyan, D. S., 555.
- Aubry, M., and Gilot, B. GLC determination of oxyhalogen derivatives and oxides of sulphur, 1848.
- Audebert, R. Study of polymers by pyrolysis and gas chromatography, 2567.
- Auer, J. E. See Theil, G. B., 880.
- Auergeellschaft G.m.b.H. Apparatus for measuring the concentration of combustible gases and vapours, e.g., methane, 3290.
- Aufrecht, W. A. See Katz, M. A., 1527.
- Ault, R. G., Hudson, E. J., Linehan, D. J., and Woodward, J. D. Assessment of head retention of bottled beer, 971.
- Aumann, D. C. See Henkelmann, R., 1223.
- Austeng, S. See Olsen, S., 2713.
- Auxier, E. M. See Mackenzie, R. D., 827.
- Avigad, G. Modified colorimetric ultra-micro determination of reducing sugars with alkaline ferricyanide reagent, 2514.
- and Bauer, S. Partition of sugars by TLC at low temperature, 719.
- Avinur, P. Direct spectrophotometric determination of gold in alloys as chloroaurate, 1150.
- See also Barzily, I., 1151, 1197.
- Avon, M., Dumas, C., Badré, R., and Dutheil, J. Determination of permanent gases by GSC, 2337.
- Avvad, A. R. See Fadeeva, V. I., 596.
- Awad, W. I., Gawargious, Y. A., and Hassan, S. S. M. Micro-determination of the azide group in organic compounds, 1908.
- Awasthi, S. P., Sahasranaman, S., and Sundaresan, M. Determination of combined nitrogen in tungsten metal powder, 128.
- Awata, N. See Tanaka, Motoharu, 1216.
- Ayad, S. R., Bonsall, R. W., and Hunt, S. Production of accurate linear solvent gradients by use of a constant-speed peristaltic pump, 1627.
- Aydogan, Y. See Tulus, R., 358.
- Ayoub, L. See Harmeyer, J., 2074.
- Ayres, J. C. See Kwon, T.-W., 1437.

## E

- Baba, T. See Yoneda, H., 163.
- Babikova, Yu. F. See Gruzin, P. L., 4.
- Babko, A. K. Development of analytical chemistry in the USSR during fifty years: review, Advances in inorganic analytical chemistry (during 1966), 1110.
- Freger, S. V., Ovrukskii, M. I., and Lisetskay, G. S. Extraction of diethyldithiocarbamates from metals from aqueous solution, 28.
- and Karnaukhova, N. N. Comparison of reagents for the spectrophotometric determination of tinIV, 616.
- Volkova, A. I., and Get'man, T. E. Comparison of reagents for fluorescence determination of aluminium. I. Product of the molar extinction coefficient and the quantum yield as a criterion of sensitivity, 1793.
- Bacchus, H. Sequential solvent extraction of urinary corticosteroids and its clinical application, 311.
- Bache, C. A., and Lisk, D. J. Selective residue determination of sulphur-, halogen- and phosphorus-containing pesticides by helium-plasma emission spectrometry, 1563.
- Bader, H., and Brandenberger, H. Boron determination in biological materials by atomic-absorption spectrophotometry, 2592.
- Badovskaya, L. A., Vysyukova, R. R., and Kuvshinov, V. G. Separate determination of hydrogen peroxide and organic peroxides in mixtures, 250.
- Badoz, J. See Briat, B., 600.
- Badré, R. See Avon, M., 2337.
- Baer, E., Sarma, G. R., Robinson, R., and Sastri, P. S. Phosphonolipids. XIV. Detection and identification of glycerophosphonolipids in the presence of their phospholipid analogues by paper chromatography of their saponification products, 1440.
- Baerheim Svendsen, A. See Karlsen, J., 350, 190.
- Bafna, S. L. See Patel, D. J., 1331.
- Bagdasarov, K. N. See Shcherbak, I. F., 1989.

- aginski, E. S., Foà, P. P., and Zak, B. Determination of rat-liver microsomal glucose-6-phosphatase activity: study of citrate and glucose 6-phosphate inhibition, 913.
- Agreev, V. V. See Zolotov, Yu. A., 2892.
- Ailey, J. J. Determination of aliphatic and aromatic acids by pyrolysis of their tetramethylammonium salts, 225.
- Aines, D. See Smith, E., 1.
- Aitsholts, A. D., and Ardell, E. E. TLC with pre-coated alumina sheets. 1. General properties, 1050.
- Ajram, M. See Mezonnet, R., 960.
- Ak, C. M. See Chong Min Bak.
- Aker, C. See Dubois, L., 2224.
- Aker, C. A. Gamma-activation analysis: review, 515.
- Pratchett, A. G., and Williams, David Royston. Photon-activation analysis with an electron linear accelerator, 1186.
- Aker, R. A., and Malo, B. A. Instrumental characterisation of traces of organic contaminants of water, 1011. Determination of phenolic compounds in water by aqueous-injection GLC, 2767.
- akke, J. E. See Robbins, J. D., 449.
- akowski, R. S. See Firsching, F. H., 1799.
- akunina, L. I. See Murashova, V. I., 2996.
- alabanoff, L., Bernasconi, F., Lara, H., and Woerner, R. Determination of rhodium in molybdenite concentrates, 137.
- alakin, Yu. P. See Kudryavtsev, V. N., 2465.
- alakshina, A. V. See Negina, V. R., 2907.
- alandina, L. A., and Subbotin, A. I. GLC analysis of the products of high-temperature chlorination of ethylene, 2503.
- alcárcová, M. See Tardon, S., 192.
- alemans, M. G. M., and Veerdonk, F. C. G. van de. Fluorescence of indole derivatives, 860.
- aletskaya, L. G. See Zakharov, M. S., 2336.
- Alint, J. A. See Kyriakides, E. C., 2627.
- Alint, T., and Szepeszy, L. Isotope exchange on gas-chromatographic columns, 451.
- all, D. L., Harris, W. E., and Habgood, H. W. Experimental evaluation of indeterminate error in height - width and height-only measurements of chromatographic peaks, 2278.
- all, G. W. Quadrupole mass spectrometers: their application as mass analysers, 2849.
- all, M. C., Burns, D. T., and Gray, A. Spectrographic determination of soluble aluminium in mild steel, 3023.
- Allozo, H. Semi-quantitative sub-micro determination of fluoride: precipitation exchange on lanthanum thallium ferrocyanide, 1860.
- alling, W. J. See Wright, C. M., 1829.
- lodijs, R. B., Comerford, A., and Childs, C. E. Micro-determination of sulphur in organic compounds containing phosphorus, 1306.
- lenc, L. See Haerdi, W., 2419.
- ltes, W. Composition of meat extracts from beef, mutton and whale meat, 2710. Determination of extracts of beef, mutton, whale or sperm-whale meat in beef cubes, 2711.
- lford, P. C. See Ord, W. O., 1439.
- u, N. T. See Nguyen Thi Ban.
- naszek, A., Krowicki, K., and Zamojski, A. Thin-layer and column chromatography of erythromycins and their degradation products, 3209.
- ncher, E. See Scherz, H., 2850.
- ndklajder Szelwar, R. See Szelwar, R. B.
- ndo, Shoji. See Motojima, K., 420.
- ndo, Shyoji. See Kamori, O., 149.
- Bandyopadhyay, C., and Chakrabarty, M. M. Chromatographic investigation of  $C_8$  to  $C_{22}$  fatty alcohols and their acetates, 1954.
- Banerjee, B. K. See Sinha, R. C. P., 2209.
- Banes, D. Modernisation of alkaloidal assays, 1. — See also Kunze, F. M., 1.
- Banks, C. V. See Kamin, G. J., 1218.
- Banthorpe, D. V., Gattford, C., and Hollebone, B. R. GLC separation of olefins including terpenes and aromatic hydrocarbons by using thallium<sup>+</sup> nitrate - glycol as stationary phase, 1916.
- Bara, H. See Reinisch, G., 1971.
- Barak, A. J., and Swanberg, S. C. Determination of selenomethionine in biological materials by paper chromatography and neutron-activation analysis, 1457.
- Barakat, M. F. Sample-injection port for GLC analysis of neutron- or gamma-ray-irradiated organic compounds, 1640.
- Barakso, J. J. Geochemical field kit for determination of traces of molybdenum, 185.
- Baranova, G. F. See Kosenko, N. N., 3063.
- Baranova, V. G. See Loginova, N. K., 1394, and Zhdanova, T. G., 1759.
- Baranowski, R. See Kulicka, J., 3100.
- Barbash, T. L., Kurbatova, V. I., and Silaeva, E. V. Absorptiometric determination of silicon in alloys containing iron and chromium, 1271. — See also Stepin, V. V., 1258.
- Barbeau, J. TLC identification of pesticide residues in fruit and vegetables, 1556.
- Barbier, M. See Villeneuve, V. R., 874.
- Barbieri, R. See Bertazzi, N., 24. Faraglia, G., 741, and Lassandro Pepe, B., 2529.
- Barbiroli, G. Analysis of coal with the thermobalance, 1950.
- Barcklow, P. Identification and gravimetric determination of polysorbate 80 in pickle products, 1549.
- Barclay, M. See Skipski, V. P., 2042.
- Barclay, R. W. Applications of descending density-gradient electrophoresis, 1079.
- Bard, A. J. See Cruser, S. A., 467.
- Bark, L. S. See Graham, R. J. T., 2.
- Barkalov, V. S. See Tulyupa, F. M., 122.
- Barkan, S. See Kunze, F. M., 1.
- Barkovskii, V. F. See Kharkover, M. Z., 1162.
- Barnaby, C. F., and Jasani, B. M. Performance of a high-sensitivity liquid-scintillation whole-body counter, 3348.
- Barnashova, G. S. See Sapozhnikova, E. V., 306.
- Barnes, C. J. See Malanoski, A. J., 2175.
- Barnes, R. W. TLC identification of nitrates used in pharmaceutical preparations, 1534.
- Barnett, M. I., Harania, V. R., and James, K. C. Importance of temperature control in Coulter counter analysis, 1726.
- Barney, J. E., II. The meaning of 'sensitivity' in trace analysis, 530.
- Barolo, P. See Cerè, L., 931.
- Baron, R. L., Palmer, N. J., Ross, R., Doherty, J., and Jacobson, W. C. Determination of radioactivity in milk resulting from oral administration of carbaryl labelled with carbon-14, 2190.
- Barra F., T., and Seeger S., B. Spectrophotometric determination of thorium with quinalizarin and 2-butoxyethanol, 1807.
- Barrall, E. M., II. See Johnson, J. F., 1641.
- Barrett, J. J., and Adams, N. I., III. Laser-excited rotation - vibration Raman scattering in ultra-small gas samples, 3323.
- Barros e Vasconcelos, M. de, Cailliez, A., and Tousseint, A. Application of infra-red spectroscopy to the analysis of inorganic pigments. I, 784.



- Barry, M.** Determination of chelated iron in urine, 2600.
- and **Cartei, G. C.** Estimation of ferrioxamine in jaundiced urine, 2653.
- Barry, R. D.** See **Guarnieri, M.**, 2057.
- Bartels, U.** Combustion determination of carbon and hydrogen in high polymers and heterocyclic compounds, 697.
- Barthe, P.** See **Wytenbach, A.**, 291.
- Barthel, Johannes.** See **Friedrich, K.**, 2449.
- Barthel, Josef, and Schmahl, N. G.,** with **Lenz, K.** Thermometric precipitation titrations, 1718.
- Barthès, F.** See **Mestres, R.**, 956, 1561.
- Barton, H. J., and Nash, C. W.** Direct determination of oxygen in organic compounds, 1301.
- Barton, T. H., jun.** See **Stewart, J. H., jun.**, 1811.
- Barton-Wright, E. C.** Microbiological assay of vitamin B<sub>3</sub> complex and inositol, 1581.
- Bartoš, F.** See **Ledvina, M.**, 882.
- Bartura, J., and Bodenheimer, W.** Complexometric determination of aluminium in analysis of silicates, 2947.
- Bartušek, M., and Havelková, L.** Preparation of solutions of titanium<sup>IV</sup> salts and determination of free acid content, 96. Complexes of boric acid with chromotropic acid: their application in volumetric analysis, 1159.
- Barua, A. K., Dutta, S. P., and Pal, S. K.** TLC of pentacyclic triterpenes of plant origin, 1433.
- Barzily, I., Yaalon, D. H., and Avinur, P.** Mixed compounds of calcium and titanium with tiron. I. Detection of calcium, 1151; II. Determination of titanium by tiron in the presence of large amounts of calcium and iron, 1197.
- Basińska, H., and Soboczyńska, J.** Determination of cerium<sup>III</sup> by titration with potassium ferricyanide in strongly alkaline solution, 81.
- Basit, M. A.** See **Chalmers, R. A.**, 587.
- Basitova, S. M., Godunova, L. I., and Shodiev, F. Sh.** Determination of microgram amounts of rhenium in sulphide minerals, 1865.
- Basker, H. B.** Relationship between refractive index and specific gravity of aqueous sucrose solutions, 1538.
- Baskurt, S.** See **DeWolfe, M. S.**, 2073.
- Basov, A. S.** See **Laskorin, B. N.**, 1120.
- Bassett, J., and Betts, J. W.** Accurate metering of gas flow for pyrolysis experiments in a controlled atmosphere, 525.
- Bastings, L.** See **Claassen, A.**, 70.
- Bate, L. C., and Dyer, F. F.** Size distribution of particles from 10 to 2000  $\mu\text{m}$  by sedimentation analysis, 3373.
- See also **Dyer, F. F.**, 1707.
- Bate, R. A.** See **Dichiaro, J. V.**, 3084.
- Bathie, F. M., and Burden, B. A.** Sequential scheme for the determination of fall-out nuclides in water, 2229.
- Bathish, J. N.** See **Tishler, F.**, 2725.
- Batt, R. D.** See **Roughan, P. G.**, 2046.
- Bauer, K.** Paper and thin-layer chromatography of proteins and nucleic acids, 3177.
- Bauer, S.** See **Avigad, G.**, 719.
- Baum, D.** Glycerol lubricant: potential source of error in commercially prepared blood-specimen tubes, 2040.
- Baum, J. D.** See **Chantler, C.**, 1427.
- Bauman, A.** Complexometric determination of calcium with calcein-murexide as indicator, 57. Gravimetric determination of caesium alone and in the presence of potassium with sodium cyanotriphenylborate, 2879.
- Bauman, L. A., jun.** See **Szymanski, H. A.**, 2306.
- Baumert, H.-P.** See **Asmus, E.**, 1206.
- Baumgarten, G.** See **Nover, L.**, 2136.
- Baumgartner, A.** See **Haerdi, W.**, 3.
- Bäumler, J.** Isolation of fluoride by micro-diffusion techniques, 807.
- and **Rippstein, S.** Toxicological significance and analysis of oral antidiabetics, 1422.
- Baunok, I., and Geissbuehler, H.** Specific determination of urea herbicide residues by electron-capture GLC after hydrolysis and formation of iodine derivatives, 2743.
- Baur, J. A.** See **Taylor, M. A.**, 2477.
- Bausch and Lomb Inc.** Electrophoresis medium, 1462.
- Bayer, I.** See **Majlát, P.**, 1495.
- Bayonove, C.** Determination of reducing sugars by using cerium<sup>IV</sup> sulphate, 1568.
- Bazhov, A. S., Lazarev, Yu. A., Simson, T. F., Koka, P. A., and Naidenov, B. M.** Determination of potassium in ores and minerals by atomic absorption spectrophotometry, 564.
- **Zakharov, V. K., Koka, P. A., and Malinovskaya, A. F.** High-frequency electrodeless discharge at atmospheric pressure for emission spectrographic analysis, 2819.
- Bazzelle, W. E.** See **Schenk, G. H.**, 1804.
- Beamish, F. E.** Critical review of methods of isolating and separating the noble metals. III. Chromatography, precipitation and fire assay, 29.
- See also **Chow, A.**, 1782, and **Chung, K. S.**, 679.
- Beard, R. J.** Extraction of porphyrins from red cells: modification of Rimington's method, 889.
- Beasley, T. H.** See **Kneip, T. J.**, 389.
- Beck, C., and Tappel, A. L.** Automated multiple enzyme monitor for column chromatography determination of hydrolytic enzymes, 909.
- Beck, J., and Sherman, M.** Detection by TLC of organophosphorus insecticides in acutely poisoned rats and chickens, 2024.
- Becker, G.** See **Eisenbrand, J.**, 1352.
- Becker, L. J.** See **Smithuis, L. O. M. J.**, 357.
- Beckett, A. H., and Brookes, L. G.** Absorption and urinary excretion, in man, of fenfuramine and its main metabolite, 1421.
- Beckey, H. D., Krone, H., and Roelgen, F. W.** Comparison of tips, thin wires and sharp metal edges as emitters for field ionisation mass spectrometry, 2831.
- Beckman, H. F., Carroll, K., Thornburg, W., Vetro, R. I., Smith, R. D., Mittler, A., Keeskes, M. B., Bevenue, A., and Kawano, Y.** Statistical evaluation of Florisil for clean-up of chlorinated pesticides, 1557.
- Beckman Instruments Inc.** Determination of oxygen by electrochemical cell, 2842. Information sheets for atomic-absorption flame photometry neodymium and scandium, 2928.
- Beckstead, H. D., French, W. N., and Smith, S.** Aids for TLC, 1053.
- Beckwith, A. C.** See **Stoloff, L.**, 2036.
- Becsey, J. G., and Scheller, K.** Adjustment of energy-compensated spectrofluorimeters, 1680.
- Bedenbaugh, J. H.** See **McDonald, C. W.**, 142.
- Bednas, M. E., and Russell, D. S.** Determination of natural-gas leakage from pipes via GLC of drill core samples of soil, 756.
- Béguin, E.** See **Siegfried, B.**, 3239.
- Behne, D., Bilal, B. A., Freyer, H. D., and Thiemann, W.** Ion separation by electrolytic migration in a counter-current system, 2279.
- Behrens, G. B.** See **Wet, W. J. de.**, 1801.
- Behrens, H.** Separation of different oxidative states of iodine by TLC, 3.
- Belcher, R., Majer, J. R., and Roberts, G. A.** Redox reactions on columns, 1045.

- Belenkova, N. S. See Larina, L. K., 48.
- Belikov, V. M. See Vitt, S. V., 2078.
- Belikova, T. E., Kaplan, B. Ya., and Shiryayeva, O. A. Pulse-polarographic determination of tellurium in arsenic and arsenic-containing products, 630.
- Bellin, J. S., and Yankus, C. A. Comparison of electrometric and gasometric methods for following autoxidations: determination of oxygen in solution, 636.
- Bellman, S. W. Mass-spectral identification of some hallucinogenic drugs, 1.
- Bellomonte, G. Determination of diazepam and its metabolites in biological fluids, 2015.
- Belluš, D. See Durišinová, L., 3080.
- Belova, G. A., Kozlova, A. F., and Boltunova, T. N. Determination of isobutoxydi-isobutylaluminium in solutions of tri-isobutylaluminium in toluene, 3076.
- Belova, O. S. See Kirillova, R. P., 622.
- Belova, R. A. See Studennikov, Yu. A., 1240.
- Belu, R., Beşchea, C., and Grigorescu, I. Determination of aromatic hydrocarbons in air by GLC, 412.
- Belzer, H. See Schaumlöffel, E., 1046.
- Bemiller, J. N. See Wing, R. E., 1923.
- Benard, P. See Jouret, C., 977.
- Bendel, E., Fell, B., Gartzten, W., and Kruse, G. GLC of unsaturated hydrocarbons on columns containing silver salts. II. Separation of all the isomeric n-octenes, the n-hexynes, and hexadienes with conjugated and cumulative double-bonds, 1312.
- Bendito, D. P., and Pino Pérez, F. Photometry after development of colour between organic compounds prepared *in situ* and inorganic cations. II. Reaction of cobalt<sup>II</sup> with biacetyl monoxime plus thiosemicarbazide and with biacetyl thiosemicarbazone oxime: analytical applications, 1879.
- Ben-Dor, L. See Feigl, F., 1126.
- Benford, K., Gilbert, M., and Jenkins, S. H. Determination of cobalt in water and waste water, 1014.
- Benk, E., and Krein, G. Identification of soya-bean extract in orange-juice concentrates, 1095.
- Bennett, H., and Reed, R. A. Analysis of chrome-bearing materials. III. Determination of alumina, 651.
- Bennett, L. S. See Jones, I. D., 436.
- Bennowitz, R., and Foth, G. Chemical determination of formaldehyde in reactant resins, 2578.
- Benš, A. See Stankoviansky, S., 2379.
- Benoit, H., and Jacob, M. Use of the ultracentrifuge for measuring molecular weights and studying the polydispersion of synthetic polymers, 775.
- Benoit, L. See Seely, J. H., 287.
- Bensch, H., Helmboldt, O., Köster, M., Hübner, K., and Protzer, H. Z. Determination of alumina in bauxite, 1160.
- Benson, A. See Rimington, C., 2092.
- Benson, M. J. See Beriman, I. B., 2285.
- Bentata, J. L. See Bonastre, J., 3345.
- Bera, B. C., and Chakrabarty, M. M. Gravimetric and thermogravimetric studies of complexes of zinc and mercury with benzimidazole, 62. Spectrophotometric determination of selenium with 2-mercaptobenzothiazole, 1851.
- Beran, P., Doležal, J., and Hrabánková, E. Determination of trace impurities in hydrofluoric acid by anodic-stripping voltammetry, 2455.
- Berežný, J., and Tvřizická, E. Applications of oscillographic polarography in quantitative analysis. XXIV. Determination of metal depolarisers in nitric acid, 1201.
- Berényi, D., Varga, D., Buday, I., Varga, L., and Szalay, A. Improved resolution and transmission of a toroid-sector-type beta-ray spectrometer, 3355.
- Berezkin, V. G., and Rastyannikov, E. G. Two-stage preparative gas chromatography, 3304.
- See also Alishoev, V. R., 1395, 2788.
- Berezovskii, V. M. See Mikhno, S. D., 3067.
- Berg, E. W., and Chiang Acosta, J. J. Fractional sublimation of the  $\beta$ -diketone chelates of the lanthanides and related elements, 1803.
- Berg, L. G. Development of thermography in the USSR: review, 4.
- Berge, H., and Strübing, B. Continuous activation of the surface of a platinum electrode used in voltammetry, 3342.
- Bergel'son, L. D. See Vaver, V. A., 2041, 3061.
- Berger, G. See Ceausescu, D., 2441.
- Berger, J. E. See Sanders, W. N., 493.
- Bergmann, E. D. See Zangen, M., 3059.
- Bergmann, G. Determination of moisture in alcohol-damped nitrocellulose and the concentration of damping alcohol, 2576.
- Bergmann, H. See Rammelt, R., 1474.
- Bergmeyer, H. U. See Moellering, H., 978.
- Bergmann, B. Apparatus for zone electrophoresis in a vertical column, 1648.
- Bergstal, S. See Christie, O. H. J., 2950.
- Bergström, J. G. T. See Andersson, K., 773.
- Bergwerksverband G.m.b.H. Portable measuring apparatus for determining the oxygen content of a gas, 2241.
- Berkey, E., and Fisher, D. E. Abundance and distribution of chlorine in iron meteorites, 187.
- Berlandi, F. J. See Eisner, U., 492.
- Berlman, I. B., Steingraber, O. J., and Benson, M. J. Hydrogen flash lamps as pulsed radiation sources, 2285.
- Berman, A. D., Frank, Yu. A., and Yanovskii, M. I. Increase in resolution of gas chromatograms by differentiation of the detector signal, 3311.
- Bermejo Martínez, F., and Coladas González, M. E. Determination of phosphates by i.r. drying in the form of molybdophosphate, 629.
- and Zunzunegui Pérez, M. Absorptiometric determination of nitrites with phenazone, 1830.
- Bernard, C. F. See Kunz, H. W., 3169.
- Bernasconi, F. See Balabanoff, L., 137.
- Berner, C. See Vogel, J., 1095.
- Bernhard, R. A. See Ashoor, S. H. M., 949.
- Bernhart, K. See Pfah, W., 3260.
- Bernier, G. M. Determination of serum haptoglobin levels, 881.
- Beronius, P., and Gabrielsson, A.-B. Microgram determination of iodide by the use of isotopic exchange, 3011.
- Beroza, M., Getz, M. E., and Collier, C. W. Automated spotting of pesticide extracts on thin-layer plates, 2745.
- See also Bowman, M. C., 1589.
- Bersier, P., and Sturm, F. von. Polarographic analysis of niobium - tin films deposited on steel, 113.
- Bersis, D. S., and Nikokavouras, J. Discrimination of chemiluminescent mixtures: the chemiluminescencegram, 3321.
- Bertazzi, N., Barbieri, R., and Rizzadri, G. Investigations with ion-exchange papers. II. Studies on some metal ion - thiocyanate complex systems, 24.
- Berthold, P. H. Infra-red spectrometric determination of mean content of methyl groups in hydrocarbon waxes, 3094.



- Bertoglio Riolo, C., Fulle Soldi, T., and Occhipinti, C. 8-Hydroxy-7-iodoquinoline-5-sulphonic acid and 8-hydroxyquinoline-5-sulphonic acid as reagents for the polarographic determination of molybdenum, 655.
- Fulle Soldi, T., and Spini, G. Oscillopolarographic determination of uranium<sup>VI</sup>, molybdenum<sup>VI</sup> and vanadium<sup>V</sup> with 8-hydroxy-7-iodoquinoline-5-sulphonic acid, 1756.
- Bertram, F., and Kobisch, W. Direct evaluation of fluorescence and absorption measurements of polycyclic aromatic hydrocarbons on chromatography paper, 752.
- Beschea, C., and Popescu, R. GLC of the systems heptane - di-isopropylbenzenes - 1-methylnaphthalene and hexadecane - di-isopropylbenzenes - 1-methylnaphthalene, 3057.
- See also Belu, R., 412.
- Bespalkenkova, E. K. See Denisov, E. I., 631, and Nadezhkina, L. S., 2978.
- Bessonov, V. A., and Zvenigorodskii, Yu. S. Device for applying streaks of material to a sorbent in preparative TLC, 2783.
- Betin, Yu. P., Lipkin, F. M., and Shelkov, L. S. Method of recording radiation in non-dispersive X-ray spectrographic analysis, 1656.
- Betti, A. See Bighi, C., 1336.
- Betts, J. W. See Bassetti, J., 525.
- Betts, T. J., and Holloway, P. J. Chromatographic identification of cannabis, 1505.
- Beuerman, D. R., and Meloan, C. E. Simultaneous determination of carbon, sulphur, chlorine, bromine and iodine in organic compounds by GLC, 1298.
- Bevenue, A. See Beckman, H. F., 1557.
- Beydatsch, R. See Alter, J., 1587.
- Beyer, W. See Wawrschinek, O., 1998.
- Beyermann, K. Infra-red spectroscopy of aqueous solutions applied to the determination of microgram amounts of protein, 879.
- Beyrich, T. Furocoumarins. XI. Comparative studies of photometric determination of some furocoumarins, 919.
- and Poser, H. Furocoumarins. XII. Influence of temperature and humidity during the dimethylformamide impregnation of paper on the  $R_F$  values for furocoumarins, 2128.
- Bezugova, E. V. See Nemodruk, A. A., 607.
- Bezuglyi, V. D., and Ponomarev, Yu. P. Polarographic determination of organic compounds reduced in the far-negative region of potential. II. Polarography of  $\alpha$ -methylstyrene and its alkyl derivatives, 272.
- See also Alekseeva, T. A., 2573, and Dmitrieva, V. N., 1342.
- Bhandari, M. R., and Sogani, N. C. 1-Hydroxy-3-methyl-1-phenyl-2-thiourea as gravimetric reagent for copper, 2881.
- Bhansali, G. R. See Mathur, D. L., 245.
- Bhargava, O. P., and Hines, W. G. Spectrophotometric determination of alumina in iron ores, sinters and open-hearth slags with Chrome Azurol S, 2468.
- Bhat, A. N., Gupta, R. D., and Jain, B. D. Spectrophotometric determination of uranium<sup>VI</sup> with 5,7-dibromo-8-hydroxyquinoline N-oxide, 2933.
- See also Manku, G. S., 678, 680.
- Bhat, T. R. See Phatak, G. M., 2338.
- Bhati, A., and Kale, N. Simple device for normalising mass spectra, 3339.
- Bhatnagar, A. S. See Tewari, S. G., 2346.
- Bhatnagar, R. K. See Niazullah, M., 783.
- Bhatt, R. A. See Patel, D. J., 1331.
- Bhattacharjee, B. K. See Dutt, N. K., 2864.
- Bhattacharyya, A. See Ghosh, N. N., 623.
- Bhattacharyya, B. N., Gupta, N., and Sthanunathan, S. Gravimetric determination of arsenic, 2430.
- Bhattacharyya, D. See Chakrabarty, M. M., 1573.
- Bhowal, G. See Majumdar, A. K., 674.
- Bhowmik, S. See Kolthoff, I. M., 196.
- Bhuchar, V. M., and Kukreja, V. P. Spectrophotometric determination of small amounts of iron, nickel, aluminium, zinc or copper, 677.
- Bianchini, J. R., Niece, A., and Macaraeg, P. V. J. jun. TLC separation and detection of methylergide and methylergometrine, 1420.
- Bibo, B. H., and Louwerse, H. L. Analysis of 2,6-substituted cyclohexanones and phenols by gas and thin-layer chromatography, 3.
- Bican-Fister, T. Separation and determination of steroids in their mixtures by TLC. II. Determination of progesterone and oestradiol benzoate and of progesterone, testosterone propionate and oestradiol benzoate in mixtures, 2140.
- Bickel, M. H. See Weder, H. J., 1096.
- Bieth, R. See Freysz, L., 310.
- Bigelow, L. B. See Weil-Malherbe, H., 2641.
- Bighi, C., Betti, A., and Saliotto, G. GLC of methyldiazines: interaction with stationary phases, 1336.
- Bigliocca, C., Girardi, F., Pauly, J., Sabbioni, E., Meloni, S., and Provasoli, A. Radiochemical separations by adsorption on manganese dioxide, 512.
- Bilal, B. A. See Behne, D., 2279.
- Bilidene, E. See Jasinskiene, E., 124.
- Bil'tyukova, E. P., and Prokopets, V. F. Separation and determination of large amounts of iron<sup>II</sup> and iron<sup>III</sup> in glass and vitreous materials, 1293.
- Binetti, L. See Camoni, I., 2746.
- Bingham, C. D. See Scarborough, J. M., 41.
- Birks, L. S. Quantitative electron-probe microanalysis, 1097.
- Birnie, A. C. See Yariv, S., 523.
- Birnie, G. D., and Harvey, D. R. Density-gradient engine for loading large-capacity zonal ultracentrifuge rotors, 2249.
- Biro, Z. See Blazsek, A., 3228.
- Biserte, G. See Derumez, P., 1473.
- Bishop, J. A. Reaction between palladium<sup>II</sup> and complexes of 8-hydroxyquinoline-5-sulphonic acid, 681.
- Bishop, L. R. European Brewery Convention the E.B.C. scale of bitterness, 969.
- Bishton, J. C. Helium-detector probe, 424.
- Bisset, N. G., and Fouché, P. GLC of tertiary strychnos alkaloids, 1096.
- Biswas, S. R., and Mukerji, J. Alkali nitrate fusion method for determination of ruthenium, 2479.
- Bitner, J. See Adamski, R., 3196.
- Bittel, J. T. See Latta, R. E., 520.
- Black, A. P., and Whittle, G. P. Colorimetric methods for halogens in water, 1007.
- Blackmore, D. J., and Jenkins, R. W. Screening test for urinary barbiturates by GLC, 2010.
- Blackmore, R. H., and Voshel, D. Determination of total organic carbon in sewage, 1019.
- Blair, D. C. See Johnson, R. A., 1710.
- Blair, L. M., and Quinn, J. A. Measurement of small differences in density: application to solutions of slightly soluble gases, 2238.
- Blakley, R. L. See Hillcoat, B. L., 905.
- Blanc, C. See Chamhu, C., 3337.
- Blanch, J. See Garrett, E. R., 1922.



- Blanický, P., Doležal, J., and Zýka, J. Reductometric determination of manganese in presence of excess of cobalt with cobalt<sup>II</sup> nitrate in a medium of alkaline triethanolamine and cyanide, 658.
- Blanquet, P., Croizet, J., Croizet, M., Bourbon, P., and Broussy, G. Determination of arsenic in the presence of arsenic-74. I. The Cribier method, 1837.
- Croizet, J., Croizet, M., and Castagnou, R. Determination of arsenic by the Marsh method in presence of arsenic-74, 1836. Determination of arsenic in the presence of arsenic-74. II. The Martin and Floret method, 3130.
- Blasius, E., and Möschter, E. Chelate exchanger based on a hydroxamic acid derived from maleic anhydride for separation of traces of iron<sup>III</sup> from concentrated salt solutions, 3.
- Blatt, W. F., Hudson, B. G., Robinson, S. M., and Zipilivan, E. M. Fractionation of protein solutions by membrane-partition chromatography, 877. Modified ultra-filtration cell for separating products of proteolysis, 2247.
- Blazejczak, J., and Van Der Weide, B. M. Apparatus for determination of organic carbon in rocks, 2497.
- Blazejewicz, L. Column chromatography of polymer mixtures on glass powder, 2568.
- Blažek, J., and Kráčmar, J., with Pinkasová, M. Study of drugs of the phenothiazine group. IV. Spectrophotometric study in the u.v. region, 1519.
- Blažek, A., and Biro, Z. Complexometric determination of hexamine in pharmaceutical preparations, 3228.
- Blechta, V. See Blechta, Z., 95.
- Blechta, Z., and Blechta, V. Heated reductor for determination of titanium by reduction with zinc or cadmium, 95.
- Bleumer, J. P. A. See Sie, S. T., 1873.
- Blijenberg, B. G., and Leijnse, B. Determination of lithium in serum by atomic-absorption spectrophotometry and flame photometry, 1992.
- Bliznyukova, V. A., and Krotenko, A. P. Ion-exchange separation of sodium-22 from magnesium-24, 2894.
- Bloom, T. R. See Mackenzie, R. D., 827.
- Blokhin, V. E. See Khovyakova, R. F., 2964.
- Blom, L., Hendricks, P., and Caris, J. Determination of available lysine in foods, 1535.
- Blouri, B. See Fauvet, J.-E., 1313.
- Bludov, V. D., Kosenko, M. S., and Merisov, Yu. I. Spectrophotometric determination of praseodymium, neodymium, holmium and erbium in solutions containing other elements and free nitric acid, 599.
- Blum, J., and Koehler, W. R. Determination of humectants in dentifrices by GLC, 2560.
- Blum, S. E., and Chicotka, R. J. Sapphire-rod thermosensor, 3366.
- Bly, R. M., and Parker, P. H., jun. Infra-red identification of thermosetting resin type in glass-fibre-reinforced articles, 1389.
- Blytas, G. C., and Peterson, D. L. Determination of kerosine-range normal paraffins by molecular sieve chromatography followed by GLC, 257.
- Bober, A., and Mills, A. L. Determination of lead in lead-crystal glass by atomic-absorption spectrophotometry, 2491.
- Boccuzzi, G. See Gaidano, G., 2637.
- Bodenheimer, W. See Bartura, J., 2947.
- Bodrina, D. E., Zhukhovitskii, A. A., and Sazonov, M. L. Concentration determination from gas-chromatographic retention volumes, 2344.
- Boeck, R. de, Adams, F., and Hoste, J. Interference from natural radioactivity in neutron-activation determination of bismuth in lead, 621.
- Boef, G. den. See Hanneema, U., 539, 1108.
- Boehringer, C. F., & Söhne G.m.b.H. Process and diagnostic agent for the determination of hydroperoxides, 2587.
- Boekenoogen, H. A. See Box, J. A. G., 980.
- Boer, F. J. de, and Visser, J. Modified Schöniger method for determination of halogen in sulphur-containing materials, 1864.
- Boer, H. Automated quantitative gas chromatography, 2263.
- Boerth, R. C. See Harbison, R. D., 334.
- Boettner, E. A. See Grunder, F. I., 2226.
- Bogan, J., and Smith, H. Relation between primidone and phenobarbitone blood levels, 2603.
- Bogat'yev, V. L., Vulikh, A. I., and Sokolova, S. I. Determination of ions of precipitates with a mixture of ion-exchange resins, 594.
- Bogdan, M. See Grigoriu, D., 742.
- Bogdanova, N. N. See Polivanova, N. G., 2970.
- Bogen, D. C., and Kleinman, M. T. Determination of microgram amounts of lead in food with a radioactive tracer, 369.
- Bogonosova, E. K. See Sadof'eva, S. A., 2954.
- Bohley, P. See Ansorge, S., 321.
- Bohm, E. Tables for the refractometric-pycnometric determination of alcohol and extract contents in spirits, 1569.
- Böhme, H., and Eichler, D. Detection of ethyl methyl ketone in alcohol and alcoholic preparations, 2704.
- Bohra, J. N. See John, P. T., 528.
- Bohuon, C., Delarue, J. C., and Comoy, E. Direct determination of blood urea with biacetyl monoxime, 2064.
- Boiko, O. S. See Agafonov, I. L., 2942.
- Boivin, R. See Bouscharain, H., 952.
- Bojarski, J. See Kahl, W., 926.
- Bokstein, B. S., Voikovskii, Yu. B., and Shvartsman, A. B. Possible uses of the Mössbauer effect in the study of metals, 1745.
- Boldina, Z. N. Determination of acetophenone in effluents, 1611.
- Bollinger, J. N., Mallow, W. A., Register, J. W., jun., and Johnson, D. E. Simple gelation procedure for liquid-scintillation counting, 514.
- Bolt, A. G., and Forrest, I. S. Assay of chlorpromazine glucuronides in human urine, 815.
- Boltunova, T. N. See Belova, G. A., 3076.
- Boltz, D. F. See Hurford, T. R., 2428, Jakubiec, R., 2435, and Parker, G. A., 2446.
- Bombaugh, K. J., Dark, W. A., and Levangie, R. F. Application of gel chromatography to small molecules, 3.
- Bonastre, J., Astruc, M., and Bentata, J. L. Coulometric analysis: determination of electro-active substances in low concentrations, 3345.
- Bonati, A., and Massarani, G. Determination of ajmaline in biological fluids, 295.
- Bondarenko, B. F. Vaporisation of electrodes in spectrographic analysis of metals, 2817.
- Bondarevskaya, E. A. See Terent'ev, A. P., 2500.
- Bondarovich, H. A., Friedel, P., Krampl, V., Renner, J. A., Shephard, F. W., and Gianturco, M. A. Volatile constituents of coffee: pyrazines and other compounds, 963.
- Bonelli, E. J. See McNair, H. M., 2800.
- Bonino, R. C. d'A. de C. See Carnevale Bonino, R. C. d'A. de.
- Bonnaire, Y. See Deschamps, P., 2871.
- Bonnar, R. U. See Gordon, B. E., 1381.
- Bonsall, R. W. See Ayad, S. R., 1627.

- Book, J. L. See Hadley, J., 3313.
- Boon, P. F. G., and Sudds, W. GLC determination of imidazolines in pharmaceutical preparations, 1520.
- Bordun, M. See Klutch, A., 2013, 3135.
- Borglund, E. See Wettermark, G., 2662.
- Borisov, G. See Jordanov, N., 3002.
- Borisov, L. M. See Zhdanov, T. G., 1759.
- Borisov, V. P., Nemets, V. M., and Petrov, A. A. Simultaneous determination of hydrogen, oxygen and nitrogen in steel by the spectrographic isotopic method, 1269.
- Bork, V. A. See Kreshkov, A. P., 2900, 3008.
- Borkowski, B., and Sobiczewska, M. Detection of phenolic alkaloids in TLC, 3194.
- See also Kaniewska, T., 2684.
- Borkowski, J. D., and Johnson, M. J. Long-lived steam-sterilisable membrane probes for dissolved-oxygen measurement in fermentation vessels, 2844.
- Borle, A. B., and Briggs, F. N. Micro-determination of calcium in biological material by automated fluorimetric titration, 2591.
- Born, H.-J. See Henkelmann, R., 1223.
- Bornak, W. E. See Gordon, C. F., 408.
- Boroviczeny, K. G. von. See Klein-Wisenberg, A. von, 1087.
- Borovskii, I. B., and Rydnik, V. I. Theory of quantitative electron-probe micro-analysis, 1097.
- Bose, B. K. See Bose, S., 3227.
- Bose, S., and Bose, B. K. Turbidimetric assay of nitrofurantoin, 3227.
- Bossaert, W. See Massart, D. L., 1802.
- Bostwick, D. C., and Giuffrida, L. Efficiency parameters of GLC columns used in pesticide-residue analysis, 2216.
- Boswell, G. G. J., and McGee, T. Radiochemical separation technique for palladium, 1284.
- Botnick, E. M. See Woolston, J. R., 1673.
- Botter, F. See Commissariat à l'Énergie Atomique, 5274.
- Boucher, E. A. See Horning, M. G., 3158.
- Bouque, C. V. See Cottyn, B. G., 2618.
- Bou de Rivera, C. See Ramos, E., 2172.
- Bouman, J. G. See Kwarts, E. W., 3156.
- Bourbon, P. See Blanquet, P., 1837.
- Bourguillot, R. See Cornu, A., 2309.
- Bourne, A. J., and Danby, C. J. Technique for ion-trapping in pulse-source mass spectrometry, 2833.
- Bouscharain, H., and Boivin, R. Determination of methanol in fruit juices and nectars, 952.
- Boutibonnes, P. See Jacquet, J., 2182.
- Bowker, D. M. See Turvey, J. R., 1324.
- Bowman, M. C., and Beroza, M. Temperature-programmed GLC of phosphorus-containing insecticides on four different columns: application to analysis of milk and of corn silage, 1589.
- Bowman, P. B., and West, W. E. GLC assay for  $\alpha$ -tocopheryl acetate in multi-vitamin products, 3214.
- Box, J. A. G., and Boekenogen, H. A. Vegetable-oil pigments: determination of carotenoids and pheophytins in soya-bean, rapeseed and linseed oils, 980.
- Boyer, M. H., Murad, E., Inami, Y. H., and Hildenbrand, D. L. Study of fragmentation patterns by beam-modulation mass spectrometry, 2311.
- Boyle, W. G., and Otto, C. H., jun. Precipitation of beryllium from homogeneous solution by decomposition of an acetylacetone species in basic solution, 53.
- Bozhevol'nov, E. A., and Fakeeva, O. A. Determination of traces of samarium in cerium dioxide, 2403.
- See also Kreingol'd, S. U., 2415, 3016.
- Bozic, J. See Holland, W. J., 2482.
- Bozzola, A., and Moltoni, E. Determination of austenite in steel by X-ray diffraction, 3027.
- Bracey, A., and Selzer, G. B. Determination of microgram quantities of belladonna alkaloids in neomycin-kaolin-pectin suspension, 3200.
- Bradatsch, R. See Froberg, M. G., 648.
- Braddock, LeR. I., and Marec, N. Use of Dow Corning 200 silicone fluid to reduce progressive peak-broadening on a GLC column, 1066.
- Bradley, G. See Stutter, E., 3207.
- Bradley, K. H. See Klinenberg, J. R., 336.
- Bradley, M. P. T., and Penketh, G. E. Determination of tertiary hydroxyl groups, 705.
- Brady, J. J. See Whitefield, R. J., 521.
- Brainina, Kh. Z., and Krapivkina, T. A. Concentration of substances before polarography. XII. Determination of cobalt with use of nitrosophthalols, 3028.
- Braithwaite, B., and Penketh, G. E. Iodimetric determination of butadiene polyperoxide in butadiene, 216.
- Braly, K. L. K. See Vanden Heuvel, W. J. A., 1447.
- Braman, R. S., and Dymako, A. Direct-current discharge spectral emission-type detector, 2274.
- Branca, F. P. High-sensitivity quartz thermometer, 526.
- Brandenberger, H. See Bader, H., 2592.
- Brar, S. S., Nelson, D. M., and Gustafson, P. F. Shield for gamma-ray spectrometry, 518.
- Bratchikova, N. I. See Navyazhskaya, E. A., 2583.
- Bratu, E. A., and Gothard, F. A. Efficiency of rectification columns with vibrated packing, 1028.
- Bratzel, M. P., jun., Mansfield, J. M., jun., and Winefordner, J. D. Influence of acid concentration on the atomic fluorescence of cadmium, 583.
- and Winefordner, J. D. Influence of type of turbulent flame on limits of detection in atomic-fluorescence flame spectrometry, 472.
- Braun, D., and Meier, W. Gel-chromatographic separation of styrene oligomers, 2569.
- Bravo, E. L., and Travis, R. H. Determination of aldosterone in human urine by GLC, 1446.
- Bray, D. F. See Kamm, L., 2167.
- Brech, F. Comparison of optical-emission and atomic-absorption methods for the analyses of plant tissues, 1988.
- Breland, E. D. See Robinson, L. R., jun., 3278.
- Bremanis, E., Deering, J. R., Meade, C. F., and Keyworth, D. A. Elimination of nitrogen and chloride interference in the iodimetric determination of sulphur in petroleum products as sulphur dioxide, 259.
- Brenner, M. Observations on the saturated chamber used in TLC, 2.
- Brenner, R. J. See Janicki, C. A., 3219.
- Bretherick, L. Glass medium-capacity two-stage laboratory film evaporator, 1029.
- Brewington, C. R. See Schwartz, D. P., 1337.
- Briat, B., and Badoz, J. Polarised-light spectrometric determination of metals of the lanthanum series by rotatory magnetic dispersion, 600.
- Bricker, C. E. See Taylor, M. A., 2477.
- Brienza, W. C., jun. See Kallmann, S., 2422.
- Briggs, D. E. 'Hollow plug' micro-column for rapid removal of ions from small volumes of liquid, 456.
- Briggs, F. N. See Borle, A. B., 2591.
- Brignac, P., jun. See Guibault, G. G., 2113.
- Brisbois, L. See Crommelynck, F., 3179.
- Briscoe, G. B., Cooksey, B. G., Ruzicka, J., and Williams, M. Continuous sub-stoichiometric determination of traces of mercury by isotope-dilution analysis, 1791.



- British Iron and Steel Research Association.** Analysis of iron- and steel-making slags: progress report, 153.
- British Standards Institution.** Cadmium anodes and cadmium oxide for electroplating, 64. Sampling of paper and board for testing, 267. Methods for the analysis of oilseed residues. Part 1. Determination of moisture and volatile matter, 402; Part 2. Determination of total ash, 402; Part 3. Determination of ash insoluble in hydrochloric acid, 402; Part 4. Determination of oil content, 402; Part 5. Determination of ethyl ether extract, 402. Testing of water used in industry. Part 7. Nitrite, nitrate and ammonia (free, saline and albuminoid), 415. Treatment of water for marine boilers, 416. Determination of pH value, conductivity, and chloride and sulphate contents of aqueous extracts of paper and board, 774. Centrifuged ammonia-preserved natural rubber latices, 787. Black PN for use in food-stuffs, 954. Colour coding for one-mark and graduated pipettes, 1024. Ostwald-Folin pipettes, 1025. Measuring the performance of laboratory electric resistance furnaces, 1614. Industrial argon, 2348. Determination of water by the Karl Fischer method, 2350. Sampling and testing boiler-water deposits, 2351. Industrial nitrogen, 2421. Methods of test for nitric acid, 2425. Industrial oxygen, 2440. Tests for formic acid, 2518. Determination of distillation of petroleum products, 2549. Gravimetric determination of lead in petrol, 2552. Determination of sulphur in petroleum products and liquefied petroleum gases by the lamp method, 2553. Determination of existent gum in fuels by jet evaporation, 2554. Ponceau MX for use in foodstuffs, 2719. Apparatus for physical methods of gas analysis. Part 1. Infra-red gas analysers for industrial use, 2825. Analysis of aluminium and aluminium alloys. Part 16. Chromium (photometric method), 2912; Part 17. Chromium (volumetric method), 2912. Determination of arsenic by the silver diethyldithiocarbamate procedure, 2971. Analysis of fuel gases. Part 2. Special determinations, 3097. Raw natural rubber, 3118. Determination of specific surface of powders. Part I. Nitrogen adsorption (B.E.T. method), 3378.
- Britske, M. E., Buyanov, N. V., and Nedler, V. V.** Development of spectrographic analysis in the USSR: review, 4.
- brodskaya, V. D.** See **Solodovnik, S. M.**, 1838.
- brodskii, E. S.** See **Polyakova, A. A.**, 1953.
- brody, J. I., Mobarak, M. A., and Haidar, M.** Micro starch-gel electrophoresis under light petroleum, 1076.
- broer, Y.** Separation and determination of cholehydroxamic acid, 313.
- brolin, S. E.** See **Wettermark, G.**, 2662.
- bronisz, H.** See **Wysocka, B.**, 1405.
- brook, A. J. W., and Robertson, R. K.** Use of Sephadex G-10 for the separation of mixtures of substituted pyridine compounds, 1530.
- brookes, L. G.** See **Beckett, A. H.**, 1421.
- brookman, D. J., and Sawyer, D. T.** Specific interactions affecting gas-chromatographic retention of hydrocarbons for modified alumina columns, 1917.
- brooks, C. J. W., and Watson, J.** Quantitative TLC of trimethylsilyl ethers of hydroxylic steroids, 1442.
- rophy, G. C., Laing, O. N., and Sternhell, S.** Removal of dissolved oxygen from samples for NMR spectrometry, 2829.
- Brotzu, G., and Meissl, A.** Micro-electrode for the determination of oxygen tension in body fluids, 2005.
- Broughton, P. M. G., Simpson, D., Mitchell, F. L., Toothill, C., and Whithy, L. G.** Assessment of the SMA12 multi-channel analyser, 2585.
- Broussy, G.** See **Blanquet, P.**, 1937.
- Brovetto, A. G. de.** See **Gelabert de Brovetto, A.**
- Brower, F.** See **Hoog, P. de**, 2715.
- Brown, C. A.** Apparatus and procedure for rapid precise determination of unsaturation via hydrogenation on a micro or ultra-micro scale, 1309.
- Brown, D. B.** Computational methods for X-ray emission from targets excited by electrons, 1097.
- Brown, H.** See **Nichiporuk, W.**, 688.
- Brown, H. D.** See **Schuster, C. F.**, 425.
- Brown, H. H., and Ebner, M. R.** Reaction-rate measurement of multiple enzyme samples by continuous-flow analysis, 344.
- Brown, M. H.** See **MacLean, K. S.**, 1577.
- Brown, R., and Preston, D.** Inorganic analysis by spark-source mass spectrometry, 2849.
- Brown, E. A., Kay, M. I., Kelliher, J. M., and Dietz, W. A.** Analysis of oxidised paraffins, 1358.
- Browne, K. W.** See **Greifeneder, J. G.**, 276.
- Brozovich, B.** Determination of unsaturated iron-binding capacity of serum by use of radioactive iron and magnesium carbonate, 2601.
- Bruce, A.** See **Aitken, R. A.**, 970.
- Bruce, T., and Ashley, R. W.** Determination of ruthenium in mixtures with uranium dioxide, 169.
- Bruckenstein, S.** See **Johnson, D. E.**, 2718.
- Bruk, B. S., Lyalikov, Yu. S., and Rozenfel'd, E. I.** Effect of temperature in a.c. polarography, 2319.
- Brummer, J.-M., and Klempin, U.** Comparison of methods for determining lactic acid in bakery products, 2709.
- Brunfelt, A. O., and Steinnes, E.** Determination of cerium and europium in standard rocks, 1174.
- Bruni, M.** See **Clayer, A.**, 3.
- Brunnée, C., Kappus, G., and Maurer, K.-H.** Field-ionisation studies of unstable organic compounds with a double-focusing mass spectrometer, 194.
- Brunner, G.** See **Leuteritz, F.**, 1969.
- Brunngraber, E. G., and Whitney, G.** Effect of ionic strength of eluting solutions on behaviour of sialomucopolysaccharides from rat brain on Sephadex G-200, 3139.
- Brüser, W.** Anaerobic technique for filling cells for i.r. spectrophotometry, 3333.
- Bruyn, A. de.** Stationary phases used in GLC, 3307.
- Bryan, F. R., and Runge, E. F.** Line interferences in the spectrochemical determination of silicon in steel, 2474.
- Bryant, J. I.** Cryostat for measurement of low-temperature Raman spectra of crystals, 2295.
- Brydia, L. E., and Willeboordse, F.** Gas-chromatographic analysis of isomeric toluenediamines, 1941.
- Brzezińska-Drygieniec, D.** See **Kubalski, J.**, 2164.
- Bubel, H. C., and Riley, B. P.** Controlled and accurate collection of sucrose density-gradient fractions, 2474.
- Buchanan, J. H., and Corfield, M. C.** Easily constructed apparatus for two-dimensional paper electrophoresis, 1649.
- Bucher, W. P.** See **Hollandsworth, C. E.**, 2847.
- Buchfink, E.** See **Schievelbein, H.**, 859.
- Büchi, J.** See **Iconomou-Petrovitch, N.**, 2679.
- Büchner, M.** See **Freimuth, U.**, 312.
- Buchtela, K.** See **Lesigang-Buchtela, M.**, 1139.
- Bucke, C.** A common solvent impurity in chromatography of tocopherols, 838.
- Buday, I.** See **Berényi, D.**, 3355.

- Buděšínský, B., and Krumlová, L.** Determination of sulphur and sulphate by titration with barium perchlorate: comparison of colour indicators, 637.
- Bufardecì, F., and Buonsanto, V.** Spectrophotometric determination of serum cholinesterase, 2118.
- Buffie, J., Monnier, D., and Haerdi, W.** Determination of sub-microgram amounts of iron by anodic-stripping voltammetry, 1868.
- Bugenis, C. K.** See **Toothacker, W. S.**, 460.
- Büger, P., Maierhofer, J., and Reis, A.** Quantitative analysis of gas mixtures in a high-current hollow cathode, 2335.
- Buhl, F.** See **Gregorowicz, Z.**, 1156.
- Bulkeley, J.** See **Krichevsky, M. I.**, 3351.
- Bullock, A. L.** See **Cirino, V. O.**, 2564.
- Bullová, M.** See **Fedoronko, M.**, 2516.
- Bundel, A. A.** See **Filippov, S. N.**, 2373.
- Bunting, T. G., and Melan, C. E.** Indirect spectrophotometric determination of palladium<sup>II</sup> with benzo-2,1,3-selenadiazole, 2481.
- Buonsanto, V.** See **Bufardecì, F.**, 2118.
- Burckhart, O.** See **Günther, F.**, 946, 3247.
- Burden, B. A.** See **Bathie, F. M.**, 2229.
- Bure, J.** See **Fruchard, C.**, 984.
- Bürgi, W., Richterich, R., Mittelholzer, M. L., and Monstein, S.** Direct enzymic determination of glucose in capillary and venous plasma, 2028.
- Burgudzhiev, Z. T., Petrakev, A., Dimitrov, G., and Damyanova, L.** Intensified blackening with spectral photo-plates: its use in spectral analysis, 2293.
- Bürjes, G.** See **Seher, A.**, 3258.
- Burke, H. J.** See **Hurwitz, A. R.**, 1524.
- Burke, J. A., and Porter, M. L.** Effect of sample moisture content on extraction of TDE from kale, 1584.
- See also **Porter, M. L.**, 2193.
- Burke, K. E.** Rapid-combustion determination of sulphur in nickel, iron or copper alloys, 1228.
- Burkhardt, R.** Electrophoresis of phenolic substances in beverages, 1095.
- Burkholder, H. R.** See **Powell, J. E.**, 2923.
- Burleigh, J. E.** See **Uraneck, C. A.**, 2528.
- Burley, R. A.** Diffraction effects in X-ray fluorescence analysis of semiconductor-grade silicon and other monocrystalline materials, 1190.
- Burlingame, A. L., Smith, D. H., and Olsen, R. W.** Real-time data acquisition, display and subsequent processing in high-resolution mass spectrometry, 2312.
- Burns, D. J. W., and Turner, N. A.** Peptide mapping on cellulose thin layers, 875.
- Burns, D. T., Fogg, A. G., and Higgins, C. T.** Electrophoretic separation and detection of the diphenyliodonium ion in presence of thallium<sup>I</sup>, tetraphenylarsonium and tetraphenylphosphonium ions, 3079.
- See also **Ball, M. C.**, 3023.
- Burriel-Martí, F., Álvarez Herrero, C., and Fernández Noriega, F.** Determination of traces of vanadium in clays, 2432.
- See also **Gallego-Andreu, R.**, 535, **Pérez-Bustamante, J. A.**, 1943, and **Valle Fuentes, F. J.**, 3046.
- Burwig, D.** See **Hiefler, R.**, 2729.
- Burýkina, S. I., and Kriulin, A. V.** Determination of thiocyanates in molten-thiocyanate baths used for surface treatment of metals, 2940.
- Buscaróns, F., and Sánchez Moreno, L.** Analytical applications of hydroxyiminoacetanilides and oximes derived therefrom. XIII, 534.
- Buscás, M. M.** See **Montagut Buscás, M.**
- Busev, A. I., Býr'ko, V. M., and Kondakova, G. K.** Extraction - photometric determination of traces of rhenium by means of derivatives of 2-pyrazoline-1-carbodithioic acid, 1866.
- **Dymov, A. M., Klyachko, Yu. A., Lashko, N. F., Kharlamov, I. P., Shemyakin, F. M., and Yakovlev, P. Ya.** Development of technical analysis of metals in the USSR: review, 4.
- **Grössl, V. G., and Ivanov, V. M.** Extraction - spectrophotometric determination of rhodium<sup>III</sup> and palladium<sup>II</sup> in the presence of platinum metals, gold and silver with 1-(2-pyridylazo)-2-naphthol, 1884.
- **Ivanov, V. M., and Krýsina, L. S.** Extraction - photometric determination of palladium with 1-(2-thiazolylazo)-2-naphthol, 1888.
- and **Karyakina, Z. P.** Tribromopyrogallol as reagent for extraction - photometric determination of vanadium<sup>IV</sup> and vanadium<sup>V</sup>, 2983.
- and **Khintibidze, L. S.** Antipyrine derivatives as analytical reagents for mercury<sup>II</sup>, 65. Antipyrine dyes as reagents for photometric determination of mercury<sup>II</sup>, 585.
- and **Shvedova, N. V.** Complexometric determination of bismuth in the presence of indium after separation of the bismuth as the iodide complex with *o*-tolylthiourea, 2431.
- **Yakovlev, P. Ya., and Kozina, G. V.** Precipitation and extraction of tetrafluoroborate by means of antipyrine dyes, 2380.
- Butkiewicz, K.** Determination of nitrogen in nitrated oils by a combustion method, 1947.
- Butler, J. M., Wheeler, G. jun., and Ross, W. D.** Micro-test for thermo-oxidative stability of fluids, 2494.
- Butler, L. R. P.** See **Scott, R. H.**, 1660.
- Butruk, E., and Vaedtké, J., with Samociuk, B.** Thin-layer partition chromatography for urinary metabolites of hydrocortisone, 2059.
- Butts, T. A., and Schnepfer, D. H.** Nomogram for predicting dissolved oxygen in streams, 1012.
- Butucelea, A.** See **Weissman, I.**, 61.
- Buvet, R.** See **Perichon, J.**, 1092.
- Buyanov, N. V.** See **Britske, M. É.**, 4.
- Buzzell, J. C. jun.** See **Jankovic, S. G.**, 1607.
- Byerley, J. J.** Simple thermal - gravimetric apparatus, 519.
- Byers, D. L.** See **MacLean, K. S.**, 1577.
- Býk, G. I.** See **Vinarov, I. V.**, 2420.
- Býkhovtseva, T. T.** See **Tserkovnitskaya, I. A.**, 1182.
- Býkov, V. T., Vas'kovskaya, A. A., and Vas'kovskii, V. E.** Chromatography of methylated methyglycosides on natural sorbents, 220.
- Býr'ko, V. M.** See **Busev, A. I.**, 1866.
- Býstritskii, A. L.** See **Aleskovskii, V. B.**, 2902.

- Cabana, B. E., and Gessner, P. K.** Determination of chloral hydrate, trichloroacetic acid, trichloroethanol, and urochlorallic acid in the presence of each other, 298.
- Cacace, F., and Perez, G.** Interrupted-elution gas chromatography of radioactive substances, 1638.
- Caddy, B., and Fish, F.** Screening technique for Indian hemp, 1503.
- **Fish, F., and Wilson, W. D. C.** GLC of Indian hemp, 1504.
- Čaderský, I.** Micro-determination of sulphide by coulometric argentimetry. III. Determination of sulphide by coulometric argentimetry with a constant applied voltage, 120.



- Cadwallader, D. E. See Das Gupta, V., 2143.
- Cahill, F. D. See Addanki, S., 792.
- Cailliez, A. See Barros e Vasconcelos, M. de, 784.
- Cain, D. F., and Pitney, R. E. Determination of the relative specific radioactivity of tritiated protein in acrylamide gel, 2083.
- Caldas, A. See Feigl, F., 103.
- Caldwell, C. E. See Plock, C. E., 86.
- Caldwell, K. A., and Tappel, A. L. GLC separation of silylated derivatives of sulphur- and selenium-containing amino-acids, 3170.
- Calì, L. J. See Khoury, A. J., 939.
- Calò, A., Cardini, C., and Quercia, V. GLC separation of some anti-tubercular drugs, 1096.
- See also Cardini, C., 1096.
- Camargo Fonseca Moraes, E. de. See Moraes, E. de C. F.
- Camera, E., and Pravisani, D. Determination of alkyl polynitrates by GLC, 411.
- Camoni, L., Gandolfo, N., Ramelli, G., Sampaolo, A., and Binetti, L. Determination of dichlorvos in cereals, 2746.
- Campbell, A. D. See Eppley, R. M., 2181.
- Campbell, E. J. M. See Sinclair, M. J., 1991.
- Campbell, M. H. Determination of rhodium and palladium by liquid-liquid extraction with Aliquat-336 and flame photometry, 1885.
- Campiglio, A. Simultaneous micro-determination of carbon and iodine in organic substances, 1902.
- Campo, M. See Mestres, R., 1561.
- Canback, T. International co-operation in pharmaceutical control, 1.
- Cano, J. P., Vignoli, L., and Viala, A. Determination of diazepam in blood and urine by GLC. I. Materials and method, 812.
- Cantuti, V., and Cartoni, G. P. GLC determination of tetraethyl-lead in air, 3271.
- Capella, P., and Losi, G. Determination of sugars in wine by GLC, 2730.
- Capitán García, F., and Román Ceba, M. Analytical applications of anthragalol and anthrapurpurin. I. Qualitative, 533; III. Spectrophotometric determination of thorium with anthrapurpurin, 606.
- Carballido, A. See Martínez Marzal, E., 1479.
- Cardini, C., Quercia, V., and Calò, A. Systematic application of GLC to the analysis of pharmaceutical preparations, 1096.
- See also Calò, A., 1096.
- Carducci, C. N. See Luis, P., 1927, and Sá, A., 1904.
- Caris, J. See Blom, L., 1535.
- Carlstrom, G. GLC determination of amino-acids in protein hydrolysates, 2649.
- Carnes, R. A. See Sawicki, E., 1924.
- Carnevale Bonino, R. C. d'A. de. See Dobrecky, J., 381.
- Carney, W. B. See Evans, W. J., 1716.
- Carnicelli, A., Grieco, M., Menchini, G. F., Saba, P., and Luisi, M. Determination of urinary testosterone by horizontal TLC and by GLC, 2055.
- Carr, R. L., jun. See Yip, T. C., 3283.
- Carrano, J. D. See Janauer, G. E., 1769.
- Carrillo, L., and Nassif, S. J. Separation of tellurium nuclear isomers in dimethyltellurium di-iodide and dimethyltellurium picrate, 646.
- Carroll, K. See Beckman, H. F., 1557.
- Čarski, T. R. See Seip, W. F., 296, 920.
- Čarský, J. See Stankoviansky, S., 2379.
- Carson, N. A., and Martínez, E. F. Fly identification by the morphology of the head, 366.
- Carson, R. B. See Morris, G. F., 2205.
- Cartaño, A. V. See Juliano, B. O., 2709.
- Cartei, G. C. See Barry, M., 2653.
- Carter, N. D., and Parr, C. W. Detection of isoenzymes of glucosephosphate isomerase, 915.
- Cartoni, G. P., and Cavalli, A. Detection of doping by TLC and GLC, 1096.
- Liberti, A., and Pela, A. Gas-chromatographic separation of polar isotopic molecules, 217.
- See also Cantuti, V., 3271.
- Cartwright, P. F. S., Newman, E. J., and Wilson, D. W. Precipitation from homogeneous solution: review, 541.
- Carunchio, V., and Gerardi, M. A. Separation and identification of some nitrocobaltate<sup>III</sup> complexes, 1279.
- and Marino, A. Separation of pyridine-carboxylic acid and -2,3-, -2,4-, -2,5- and -2,6-dicarboxylic acids by two-dimensional ion-exchange TLC, 1354.
- Caruso, J. A., Jones, G. G., and Popov, A. I. Titrations of weak acids in 1,1,3,3-tetramethylguanidine medium, 1938.
- Carvalho, A. H. de. Determination of total carbon dioxide in water by precipitation with barium chloride and aqueous ammonia and fusion of the precipitate with borax, 3276.
- Casey, H. J., and Wells, D. G. Stability of a tetrahydrofolic acid - enzyme system for the determination of *N*-formimidoethylglutamic acid and urocanic acid, 2647.
- Cassaigne, A. See Neuzil, E., 862.
- Cassera, A. Construction of a tube for gel filtration, 2246.
- Cassidy, R. M., and Ryan, D. E. Use of di-substituted hydroxamic acids in the determination of vanadium, 2434.
- Castagnou, R. See Blanquet, P., 1836, 3130.
- Castell, J. D. See Ackman, R. G., 393.
- Castelli, W. P. See Simon, W., 1074.
- Castello, G., and D'Amato, G. Vacancy chromatography as the cause of anomalous response of thermal-conductivity detectors, 3310.
- and Munari, S. Determination of traces of water in hydrocarbons by gas-gel chromatography, 712.
- Castex, M.-C., Romand, J., and Vodar, B. Double-beam vacuum spectrophotometer for far u.v. investigations, 3332.
- Castle, J. E., and Surman, P. L. Sampling and isotopic micro-determination of water vapour during the self-diffusion of oxygen in magnetite, 1766.
- Castoldi, B. See Perego, R., 3220.
- Cattin, G. See Fremaux, —, 2406.
- Caufield, K. See Harrison, W. W., 1090.
- Cavalli, A. See Cartoni, G. P., 1096.
- Cavilli, I. A. J. Determination of xanthurenic acid, 3-hydroxykynurenine and kynurenine, 871.
- Ceausescu, D., Așteleanu, M., Vlad, L., and Berger, G. Determination of sulphite or nitrite by titration with hydrogen peroxide stabilised with titanium<sup>IV</sup> salts, 2441.
- Ceba, M. R. See Román Ceba, M.
- Čechová, D. Determination of zirconium in steel, 156.
- Ceglarski, R. See Ellert, H., 929.
- Celon, E. See Di Bello, C., 735.
- Cerbo, M. di. See Cianetti, E., 1975.
- Cerè, L., and Barolo, P. Determination of ketophenylbutazone by thin-layer separation and photometric measurement of the fluorescence quenching. II. 931.
- Cerutti, P. See Roboz-Einstein, E., 2085.
- Československá Akademie Věd. Composite filters for collecting air-borne impurities, 1621. Description of a flow-through photometer, 2301. Description of a flow-through optical cell, 2302.

- Cetorelli, J. J. See Winefordner, J. D., 3334.
- Chafetz, L., and Gaglia, C. A., jun. Determination of prazepam and related drugs, 2149.
- Chakrabarti, C. L. Atomic-absorption spectroscopy of tellurium, 645.
- Chakrabarty, M. M. See Bera, B. C., 62, 1851.
- Chakrabarty, M. M., and Bhattacharyya, D. Detection of rearrangement reactions of triglycerides by silver nitrate TLC, 1573.
- See also Bandyopadhyay, C., 1954.
- Chakraborty, B. B., and Long, R. GLC determination of polycyclic aromatic hydrocarbons in soot, 1004.
- Chakraborty, J. See Cooke, B. A., 1984.
- Challen, S. B., and Kučera, M. Chromatographic studies of wood preservatives, 1379. Chromatographic studies on Canada balsam and some resin acids, 1963.
- Chalmers, R. A., and Basit, M. A. 8-Hydroxyquinoline as a gravimetric reagent for aluminium, 587.
- and Telling, G. M. Rhodizonic acid as a qualitative reagent, 1100.
- and Umar, M. Secondary standards. I. Nickel ammine complexes, 1104.
- Chaloupka, J. Transistorised miniature pH meter, 2841.
- Chambaz, E. M., and Horning, E. C. Formation of steroid trimethylsilyl ethers for GLC, 846.
- Chambers, L. M. X-ray diffraction determination of dialkyldimethylammonium-urea adduct in urea, 231.
- Chambu, C., Huynh, C. T., Blanc, C., and Espagno, L. Isotopic analysis by mass spectrometric peak integration, 3337.
- Chand, P. See Malik, W. U., 1952.
- Chandhok, Y. M. See Niazullah, M., 783.
- Chandler, E. L., Nunley, C. E., and Anderson, N. G. Analytical techniques for cell fractions. VI. Multiple gradient-distributing rotor, 1034.
- Chandra, D., Sharma, V. N., and Mital, R. L. Separation and differentiation of 3,7-ring-substituted phenothiazines by TLC, 252.
- Chandran, D. V. See Niazullah, M., 783.
- Chaney, N. A. See Saslaw, L. D., 337.
- Chang, J. C. See Hansen, P. M. T., 2720.
- Chang, T.-L. Relationship between the molecular sizes of acids and alcohols and their elution volumes in gel-permeation chromatography, 1316.
- Changus, G. C. See Forman, D. T., 2252.
- Chanin, G., Chow, E. H., Alexander, R. B., and Powers, J. Solvent for extracting oil and grease for their determination in effluent and sludge, 1021.
- Chantler, C., Baum, J. D., and Norman, D. A. Use of a Dextrostix in the diagnosis of neonatal hypoglycaemia, 1427.
- Chantooni, M. K., jun. See Kolthoff, I. M., 196.
- Chapman, J. F., and Thackray, N. Conductimetric determination of sulphur in beryllium oxide ceramics by induction heating and peroxide absorption, 1892.
- Charles, A. Phase-lock circuit for a 100-MHz NMR spectrometer, 2307.
- Charles, R., and Knevel, A. M. Alternating-current polarographic determination of non-protein mercapto-groups in biological systems, 2597.
- Charro Arias, A. See Simal Lozano, J., 1543.
- Chasar, A. G., and Lucchesi, C. A. Determination of 4-benzo[b]thien-4-yl methylcarbamate, 999.
- Chase, D. L. See Heffelfinger, R. E., 1827.
- Chashchina, O. V. See Otmakhova, Z. I., 2867.
- Chastonay, R. See Weiss, P. J., 1507.
- Chatten, L. G., and Racz, W. J. Determination of some synthetic anti-parkinsonism agents, 2152.
- Chawla, K. L., and Tandon, J. P. Determination of vanadium<sup>IV</sup> and vanadium<sup>V</sup> individually and in their binary mixtures by titration with vanadium<sup>II</sup> sulphate, 634.
- Chebotaeva, M. M. See Vakhtel', M. I., 2462.
- Chechneva, A. N., and Podchainova, V. N. Extraction - photometric determination of platinum with 1,4-diphenylthiosemicarbazide, 3040.
- Cheftel, R.-I. See Nicot, C., 1460.
- Chekmarev, A. M. See Vladimirova, L. M., 2962.
- Chelnokova, M. N., Korotkova, T. N., and Gromova, V. G. Separation of polyfluorinated acids by TLC, 3068.
- Chen, J.-Y. T., and Gould, J. H. Silver chloride micro-technique for i.r. spectrophotometry, 2826.
- See also Damico, J. N., 2023.
- Chen, K.-Y. See Wang, K.-T., 3166.
- Chen, S. N., and Lin, E. Extraction of vanadium with benzoin  $\alpha$ -oxime dissolved in chloroform, 110.
- Chen, T., and Dotti, L. B. Determination of calcium in urine and stool by a resin exchange method, 1993.
- Cheng, F. W. Titrimetric micro-determination of organic fluorine with arsenazo I as indicator, 700.
- Chenouard, J., and Nief, G. Determination of boron in uranium by mass spectrometry, 1815.
- Cheong, F. H., and Salt, F. J. Determination of chromium<sup>III</sup> oxide in faeces by wet digestion, 1332.
- Cherbuliez, E. Recent progress in organic and analytical chemistry, 1095.
- Cherkasskii, A. A., Gel'man, N. É., and Terent'eva, E. A. Advances in the analysis of organic substances, 4.
- Chernikova, S. M. See Kroshkina, A. B., 635.
- Chernousova, K. G. Spectrographic determination of aerosols of lead, arsenic and zinc in industrial atmospheres, 1593.
- Chernov, V. K. See Zarinskii, V. A., 1696.
- Chernysh, I. G. See Lyutaya, M. D., 2910.
- Cherrier, C., and Nalbantoglu, M. Determination of trace impurities in mercury and high-purity acids by spark-source mass spectrometry, 68.
- Cherry, K. See Chervenka, C. H., 2248.
- Chervenka, C. H., and Cherry, K. Technique for continuous-flow centrifugation, 2248.
- Chervinko, A. G., Mel'nik, P. M., and Lisnyak, S. S. Determination of nickel<sup>III</sup> in nickel<sup>II</sup> oxide, 3034.
- Chester, R., and Hughes, M. J. Spectrophotometric determination of copper, lead, nickel, vanadium and cobalt in marine sediments, 3281.
- Chi, K. See Šaršunová, M., 3192.
- Chiang Acosta, J. J. See Berg, E. W., 1803.
- Chiba, M., and Morley, H. V. Losses of pesticide during sample preparation, 2206.
- Chibisova, G. P. See Vasilevskaia, L. S., 2953.
- Chibrikov, V. M. See Veretil'nyi, A. Ya., 2830.
- Chicaud, M. See Groulade, J., 1461.
- Chicotka, R. J. See Blum, S. E., 3366.
- Chikhladze, B. Ya. See Oganezov, K. A., 2329.
- and Shvangiradze, R. R., 1225.
- Chikin, Yu. A. See Lukhovitskii, V. I., 1030.
- Chikisheva, L. S. See Negina, V. R., 2907.
- Childs, C. E. See Balodis, R. B., 1306.
- Chisolm, J. J., jun. Determination of 5-amino laevulinic acid in plasma, 2034.
- Chiu-Lin, C.-H. Determination of adenosine nucleotides, 2661.
- Chodos, A. See Nichiporuk, W., 688.
- Chojnacka, G. See Ościk, J., 748.



- Hong Min Bak.** Ligand-exchange studies with an iminodiacetic acid ion-exchange resin, 249.
- Hou, F.-C., and Freiser, H.** Role of adduct formation in the extraction of zinc with substituted 8-hydroxyquinolines, 1788.
- Houlis, N. H.** Determination of amines by TLC and interference refractometry, 228. Determination of salts of ephedrine and codeine in pharmaceutical preparations, 2682.
- Jovin, P., and Lebbe, J.** Chromatography of aromatic hydrocarbons. I. Determination, by  $^{14}\text{C}$ , of aromatic hydrocarbons in the air of working environments, 2753.
- **Lebbe, J., Ducros, M., and Guénier, J. P.** Chromatography of aromatic hydrocarbons. II. Determination of aromatic hydrocarbons in aliphatic compounds, hydrocarbons and complex solvents, 2530.
- Jow, A., and Beamish, F. E.** Comparison of methods for determining gold in ores, 1782.
- Jow, E. H.** See Chanin, G., 1021.
- Khrekian, G. P.** See Ascione, P. P., 355.
- Christen, F.** See Voegell, P., 1302.
- Christensen-Lou, H. O., and Clausen, J.** Quantitative TLC of polar lipids in biological fluids, 2043.
- Christian, G. D., and Feldman, F. J.** Determination of non-metals by atomic-absorption spectrophotometry, 2862.
- See also Simon, R. K., 3131.
- Christianson, A. H., Dinneen, L. C., James, G. W. L., and Perkins, A. C.** Measurement and statistical analysis of experimental tracings, 1623.
- Christianson, D. D., Paulis, J. W., and Wall, J. S.** Ion-exchange chromatography of nucleotides of maize grain on polyethylenimine - cellulose columns, 2099.
- Christie, O. H. J., and Bergstal, S.** Calibration of intensity data for X-ray fluorescence analysis of silicate rock, 2950.
- Christofferson, K.** Separation and determination of carbonyl compounds in spent sulphite liquor by ion-exchange chromatography, 1968.
- Christopher, A. J., and Fennell, T. R. F. W.** Determination of phosphorus in organic compounds on the centimilligram scale, 1307.
- Chromecék, R.** See Kubín, M., 1626.
- Chromy, G.** See Kainz, G., 1901.
- Chromý, V., and Šrp, L.** Mercurimetric determination of sulphur in organotin compounds, 702.
- Chudina, R. I., Usova, L. V., and Lur'e, Yu. Yu.** Determination, by phase analysis, of compounds of copper and lead, 1141.
- Chughtai, F. R.** See Hashmi, M. H., 924.
- Chuiko, V. T., and Reva, N. I.** Photometric determination of traces of bismuth in cobalt and its salts, 1280.
- See also D'yachenko, N. P., 2884.
- Chukreeva, G. N.** See Gurevich, A. I., 1633.
- Chumachenko, M. N., and Pakhomova, I. E.** Simultaneous determination of carbon, hydrogen and nitrogen in organic substances by gas chromatography. I. Choice of oxidant, 3051.
- Chung, K. S., and Beamish, F. E.** Simultaneous radiochemical determination of ruthenium and osmium, 679.
- Chupakhin, M. S., and Duev, L. T.** Mass-spectrometric determination of oxygen and nitrogen as impurities in hydrogen and argon, 1763.
- Churáček, J.** Reproducibility of  $R_F$  values in impregnated-paper chromatography, 2.
- Churchwell, S. E.** See Seitz, C. A., 646.
- Cianetti, E., Cerbo, M. di, and Salvi, A.** Examination of natural resins by u.v. spectrophotometry, 1975.
- Cichowski, Z., and Grochowski, R.** Determination of primary and secondary xanthate groups in cellulose xanthate, 2563.
- Ciegler, A.** See Peterson, R., 309, 1439.
- Cima, L.** See Levorato, C., 3213.
- Cirino, V. O., Bullock, A. L., and Rowland, S. P.** Distribution of substituents in methyl vinyl sulphone-treated cotton celluloses by TLC, 2564.
- Ciuhandu, G., Rusu, V., and Făgăsan, T.** Determination of benzene, toluene, naphthalene and anthracene in admixture and in air, 1001.
- Claassen, A., and Bastings, L.** Determination of aluminium with 8-hydroxyquinoline. I. Precipitation in acetate-buffered solution, 70.
- **Bastings, L., and Visser, J.** Determination of aluminium with 8-hydroxyquinoline. II. Precipitation in ammoniacal cyanide - EDTA solution, 70.
- Clampitt, B. H., and Hughes, R. H.** Differential thermal analysis crystallinities and melting-points of ethylene - vinylpyrrolidone copolymers, 2571.
- Clark, I. T.** Gas-chromatographic analysis of phenols from lignin, 1964.
- Clark, R. S., Rowe, M. W., Ganapathy, R., and Kuroda, P. K.** Determination of iodine, uranium and tellurium in meteorites, 189.
- Clarke, E. G. C., and Leach, H.** Identification of *N*-( $\alpha$ -methylphenethyl)nicotinamide diphosphate, 297.
- Clarke, E. M. W., and Ellinger, G. M.** Fractionation of plant material. II. Amino-acid composition of fractions from broad-bean plant (*Vicia faba* L.) and chromatographic differentiation of hydroxyproline isomers, 876.
- Classen, H. G., Marquardt, P., and Späth, M.** Continuous fluorimetric determination of calcium in whole blood and plasma, 3126.
- Claude, J. B., Corre, F., and Levallois, C.** Fluorimetric semi-automated determination of serum triglycerides, 2624.
- Clausen, J.** See Christensen-Lou, H. O., 2043.
- Clausen, T.** Measurement of phosphorus-32 activity in a liquid-scintillation counter without use of scintillator, 1712.
- Clayer, A., Agneray, L., Vandenbussche, G., and Bruni, M.** Separation of  $\text{C}_4$  hydrocarbons by chromatography on a moving bed, 3.
- **Agneray, L., Vandenbussche, G., and Petel, P.** Preparation of hydrogen isotopes by chromatography on a moving bed, 3.
- Cleary, J. W.** See Uraneck, C. A., 2528.
- Clementini, L.** See Maltese, P., 777.
- Clements, J. A., Forbes, St. J., Olliff, C. J., and Rogers, A. E.** Colorimetric determination of ergocalciferol with trifluoroacetic acid, 1511.
- Clerc, J. T., Wipf, H.-K., and Simon, W.** Attachment to a spectropolarimeter for solvent-compensated measurement of magneto-optical rotatory dispersion, 488.
- Cline, G. B.** See Anderson, N. G., 1034.
- Clinton, O. E.** Three-channel flame photometer for soil analysis, 1659.
- Coal Tar Research Association.** Review of coal tar technology, 1368.
- Cobo, A.** See Gallego-Andreu, R., 535.
- Cochrane, W. A.** See DeWolfe, M. S., 2073.
- Coedo, A. G.** See Gómez Coedo, A.
- Coetzee, C. J.** Volumetric determination of chlorate with silver nitrate after reduction with nitrite or bisulphite, 3009.
- Coetzee, J. H. J.** See Strelow, F. W. E., 1772.
- Coffin, D. E.** See Kamm, L., 2167.



- Cohen, J. B., Setser, J. L., Kelley, W. D., and Shearer, S. D., jun. Determination of tritium and krypton-85 in aqueous samples by liquid-scintillation techniques, 3274.
- Cohen, N. See Cosolito, F. J., 1869.
- Cohen, S., Lifshitz, A., and Samish, Z. Determination of bitterness of olives, 379.
- Coladas González, M. E. See Bermejo Martínez, F., 629.
- Coleman, C. H. See Fowler, J. L., 1546.
- Coles, L. Chromatographic separation of branched-chain and straight-chain compounds on columns containing urea: separation of acids as their methyl esters, 3142.
- Colfs, B., and Verheyden, J. Electrophoresis and Sudan black staining of lipoproteins on gelatinised cellulose acetate, 2089.
- Coll, E. E. See Conkerton, E. J., 3168.
- Collier, C. W. See Beroza, M., 2745.
- Collins, C. L. See Wing, R. E., 1923.
- Collins, E. B. See Speckman, R. A., 2038.
- Collins, F. I., Alexander, D. E., Rodgers, R. C., and Silvela S., L. Analysis of oil content of soya beans by wide-line NMR, 1548.
- See also Alexander, D. E., 397.
- Collins, J. C., Joseph, J. D., and Atkinson, J. W. Gamma-ray spectrometry for measurement of low-level radioactivity with special reference to iodine-131 in water, 2761.
- Collins, R. D. See Evans, S., 2849.
- Collinson, H. A., Rodkey, F. L., and O'Neal, J. D. Determination of carbon monoxide in blood by GSC, 2593.
- Colombo, E. Determination of cynarin, chlorogenic acid and caffeic acid by TLC, 2727.
- Colucci D'Amato, F. Paper chromatography of amino-acids in human sweat, 2076.
- Comberg, R. See Schultz, O.-E., 2256.
- Côme, G. M., Dzierzynski, M., Martin, R., and Niclause, M. Chromatographic determination of methane and traces of hydrogen and ethane during the pyrolysis of acetaldehyde, 222.
- Comer, J. P., Hartshaw, P., and Stevenson, C. E. One-tablet assay of mestranol by a direct colorimetric and an automated fluorimetric method, 2142.
- Comerford, A. See Balodis, R. B., 1306.
- Commissariat à l'Energie Atomique. Improved columns for hydrogen-isotope separation by chromatography, 2874.
- Comoy, E. See Bohuon, C., 2064.
- Comstock, B. S. See Comstock, E. G., 2022.
- Comstock, E. G., Comstock, B. S., and Ellison, K. Turbidimetric method for the determination of pentachlorophenol in urine, 2022.
- Conder, J. R., and Langer, S. H. Carrier-gas effects in GLC with packed columns, 439.
- Furnell, J. H., and Walsh, R. Switching valves for use in multi-column gas chromatography, 2265.
- Condorelli, P. See Scapini, G., 1942.
- Conkerton, E. J., Coll, E. E., and Ory, R. L. Computer program for identifying anomalous peaks in automated amino-acid analyses, 3168.
- Conklin, J. D. See Hollifield, R. D., 2606.
- Conrad, F. J., and Kenna, B. T. Neutron-activation analysis for manganese in polysulphide adhesive materials, 779.
- Conradi, G. Determination of magnesium, calcium, sodium and potassium in tissue samples, 284.
- Consoliver, R. E. See Rork, G. D., 3338.
- Constantin, V. See Sontea, S., 2887.
- Constantinescu, A. See Grisar, R., 3245.
- Constantino, U. See Torracca, E., 27.
- Cook, A. See Harrison, A. J., 1413.
- Cook, C. E., Twine, M. E., and Wall, M. E. Identification of cholesteryl esters in flue-cured tobacco, 1444.
- Cook, D. See French, W. N., 2125.
- Cooke, B. A., and Chakraborty, J. Absorption system for collecting respiratory carbon dioxide from dogs, 1984.
- Cooksey, B. G. See Briscoe, G. B., 1791.
- Cooper, F. F., jun. See Smith, A. J., 3093.
- Cope, B. See Crompton, T. E., 2508.
- Cope, L. H. Roman Imperial coinage alloy standards: analytical evidence, 61.
- Coppini, D., and Albasini, A. Detection and determination of captan in wines by i.r. spectrophotometry, 2195.
- Coquema, C. See Coulomb, R., 2397.
- Córdova-Orellana, R. See Vicente-Pérez, S., 1805.
- Corfield, M. C. See Buchanan, J. H., 1649.
- Corio, E. See Delle Monache, F., 2131, and Marini-Bettolo, G. B., 1.
- Cormos, A. See Várzaru, E., 150.
- Cornelis, R., Speecke, A., and Hoste, J. Radiochemical determination of fission products of uranium, 2409.
- Cornu, A., Bourguillot, R., and Stéfani, R. Chemical analysis of solids by spark-source mass spectrometry, 2309.
- Corre, F. See Claude, J. R., 2624.
- Cosolito, F. J., Cohen, N., and Petrow, H. G. Simultaneous determination of iron-55 and stable iron by liquid-scintillation counting, 1869.
- Costa, M. See Gabella, G., 2234.
- Costello, C. E. See Damico, J. N., 2023.
- Cottino, M. See Salvatore, F., 349.
- Cottyn, B. G., and Boucque, C. V. Determination of volatile fatty acids in rumen fluid by GLC, 2618.
- Coulomb, R., Coquema, C., Goldsztejn, M., and Schiltz, J. C. Determination of lanthanum, samarium, dysprosium and europium by paper chromatography followed by neutron irradiation, 2397.
- Coulter Electronics Ltd. Vessel construction for a particle-study device, 1724. Automated particle size data converting apparatus, 1725. Automated control structure for particle-study apparatus, 3377.
- Court, W. E. See Harris, Melvyn J., 3201.
- Courtot-Coupez, J., and Le Démézet, M. Electrochemistry in dimethyl sulphoxide. I. Reference electrode and limits of electro-activity, 2315.
- Cover, R. E. See Meites, L., 1889.
- Cox, F. H., and Dirks, O. B. Determination of fluoride in blood serum, 3133.
- See also Dirks, O. B., 1009.
- Crăciuneanu, R., and Florean, E. Reactions of heavy-metal cations with 1-acyl-4-arylthiosemicarbazides. I. Absorptiometric determination of cobalt with 1-benzoyl-4 phenylthiosemicarbazide, 2478.
- Craig, J. C. See Duffield, A.-M., 2693.
- Cramp, D. G. Automated enzymic fluorimetric determination of pyruvic and lactic acids in blood, 2615.
- Crawford, M. A. See Lopez, A., 2180.
- Crawforth, C. G., and Waddington, D. J. Gas-chromatographic analysis of gases formed from the pyrolysis of nitroalkanes, 2525.
- Creighton, D. M. Improved source mounting for thermal-source mass spectrometer, 2832.
- Creppe, M. L. See Noirtalaise, A., 1096.
- Crespo, F. See Cucarella, M. C. M., 1973. Kuck, J. G. de, 2203, and Macchi, R. A., 1926.

- Creveling, C. R., and Daly, J. W.** Identification of 3,4-dimethoxyphenethylamine from urine of schizophrenic patients by mass spectrometry, 319.
- Crider, W. L.** Spectrothermal-emission aerosol-particle analyser, 3374.
- and **Strong, A. A.** Flame ionisation pulse aerosol particle analyser, 1592.
- Cripps, C. M.** Determination of plasma haemoglobin levels, 2094.
- Criscio, C., and Lada, H. F.** Determination of plutonium-239 by resin paper ion-exchange separation and liquid-scintillation counting, 2938.
- Criss, J.** Structure of equations for quantitative analysis, 1097.
- Crocker, C. L.** Determination of urea-nitrogen in serum or plasma without deproteinisation, 314.
- Croizet, J.** See **Blanquet, P.**, 1836, 1837, 3130.
- Croizet, M.** See **Blanquet, P.**, 1836, 1837, 3130.
- Crommelynck, F., Brisbois, L., Peeters, J., and Gillo, L.** Thin-layer gel filtration of cobra venoms, 3179.
- Crompton, T. E.** Alkene formation during hydrolysis of trialkylaluminium compounds, and its avoidance, 237.
- and **Cope, B.** Continuous thermometric measurement in hydrocarbons of total impurities that react with organoaluminium compounds, 2508.
- Cross, N. L.** Humidity-control system for a small chamber, 2235.
- Crossley, D.** See **Weldrick, G. J.**, 610.
- Crossley, H., and Lynch, V. P.** Determination of alkyl dinitrophenyl carbonates and other esters, with particular reference to dinobutyl, in fruit and vegetables, 3250.
- Crotte, C., Mulé, A., and Planché, N. E.** Automatic apparatus for sequential passage of solvents in column chromatography, 1040.
- Crow, D. R.** Polarography and the application of polarographic techniques. II, 494; III, 3341; IV, 3341; V, 3341.
- Cruceanu, A.** See **Popa, L.**, 2660.
- Cruser, S. A., and Bard, A. J.** Concentration-intensity relationships in electrogenerated chemiluminescence, 467.
- Crutchfield, C. A.** See **Wilson, K. W.**, 2728.
- Csajka, M.** Application of isotopic exchange for the determination of tin in nickel, 676.
- Csiba, I.** See **Stuchlik, M.**, 751.
- Cucarella, M. C. M., and Crespo, F.** Quantitative analysis of impurities in phthalic anhydride by GLC, 1973.
- Cuff, D. R. A.** See **Pierce, T. B.**, 1272.
- Cummings, J. G., and Zee, K. T.** Determination of organic chloride impurities in food-grade hydrochloric acid, 1255.
- Cummings, T., and Korkisch, J.** Ion-exchange behaviour of several elements in mixed solvents, 34.
- Cunningham, J. G., Goodall, J. A. B., Kitt, G. P., Webster, C. B., and Willis, H. H.** Separation, purification, mounting and counting of fission products, 26.
- Curl, H., and Davey, E. W.** Improved calibration and sample-injection systems for non-destructive analysis for permanent gases, total carbon dioxide and dissolved organic carbon in water, 2755.
- Curran, D. J., and Fletcher, K. S., III.** Lanthanum hexaboride as an electrode material for electrochemical studies, 2316.
- Currie, L. A.** Limits for qualitative detection and quantitative determination: application to radiochemistry, 3357.
- Curtins, H.-C., and Müller, M.** GLC of 17-oxosteroids and progesterone metabolites of urine: comparison of different methods of hydrolysis, 840. Combination of GLC and TLC in steroid investigations, 2051.
- Cushmac, M. E.** See **Stoloff, L.**, 2036.
- Custot, F.** See **Mezonnet, R.**, 960.
- Cuzner, J.** See **Rehberger, A. J.**, 968.
- Cvjetičanin, N.** Reversed-phase chromatography of alkaline-earth metals on paper treated with dibutyl phosphate, 2365.
- Cygowska, I.** See **Gajewski, S.**, 3270.
- Czakow, J., Grzelak, E., and Szyborska, K.** Adaptation of the Zeiss tri-prismatic spectrograph for spectroscopic analyses, 3320.
- Czarnecki, W.** See **Nerlo, H.**, 3261.
- Czerwiński, W., and Guberska, J.** Determination of the degradation products of ethylenebis(dithiocarbamates) by TLC and investigations of their decomposition *in vitro*, 998.
- Czerniec, J., and Gregorowicz, Z.** Determination of cadmium and lead in electroplating effluents, 3284.
- Czerwiński, W., and Guberska, J.** Determination of small amounts of benzoic and phthalic acids in terephthalic acid by partition chromatography on a strongly acidic cation exchanger, 3081.
- Członkowski, F.** See **Kalinowski, K.**, 3208.
- Czubyrt, J. J., and Gesser, H. D.** Separation of methane and perdeuteromethane by use of porous polymer beads, 1915.
- Czucz, P.** Identification and determination of *p*-sulphamoylbenzoate as an impurity in saccharin, 2186.
- Czulińska, D.** See **Missala, I.**, 3267.

## D

- Dąbkowska, M.** Determination of magnesium as pyrophosphate, 55.
- Dagnall, R. M., El-Ghamry, M. T., and West, T. S.** Analytical applications of ternary complexes. V. Indirect spectrophotometric determination of cyanide, 1817.
- **Thompson, K. C., and West, T. S.** Studies in atomic-fluorescence spectrophotometry. V. Fluorescence characteristics and determination of antimony, 105; VI. Fluorescence characteristics and determination of bismuth with an iodine electrodeless discharge tube as source, 1839. Molecular-emission spectroscopy in cool flames. II. Behaviour of phosphorus-containing compounds, 2427.
- Dahl, W. E.** Extraction - spectrophotometric determination of fluorine in organic materials, 2498.
- Dahlqvist, A.** Assay of intestinal disaccharidases, 2106.
- Dahmer, L. D.** See **Fritz, J. S.**, 1758.
- D'Alessio, G.** See **Floridi, A.**, 2115.
- D'Alessio, G., Carnevale Bonino, R. C.** See **Carnevale Bonino, R. C. d'A. de.**
- Dalglish, C. E.** Gas chromatography in brewing: review, 964.
- See also **Miles Laboratories Inc.**, 2105.
- Dalla Fini, G.** See **Pietrogrande, A.**, 1304.
- Dallas, F. C., Lautenbach, A. F., and West, D. B.** Phenolic compounds formed in brewing. V. GLC determination, 974.
- Dallas, M. S. J.** Reproducibility of  $R_K$  values on silica gel in TLC, 2. Effect of layer thickness on  $R_F$  values in TLC, 2. Precision in the direct densitometry of coloured compounds on thin-layer chromatograms, 2.
- and **Stewart, M. F.** TLC of polyglycerols, 219.



- Daly, James. Selective frequency detector for audio-frequency conductivity bridges, 1699.
- Daly, Jeremiah. See Graham, R. J. T., 2.
- Daly, J. W. See Creveling, C. R., 319.
- D'Amato, F. C. See Colucci D'Amato, F.
- D'Amato, G. See Castello, G., 3310.
- Damico, J. N., Chen, J.-Y. T., Costello, C. E., and Haenni, E. O. Spectrometric analysis of Klein's metabolites of aldrin and dieldrin, 2023.
- Dams, R., and Hoste, J. Neutron-activation analysis for trace elements in electrolytic zinc sulphate solutions. I. Simultaneous determination of mercury, uranium and ytterbium, 1158.
- Damyanova, L. See Burgudzhiev, Z. T., 2293.
- Danby, C. J. See Bourne, A. J., 2833.
- Dandoy, J. GLC determination of traces of acetonitrile in acrylonitrile, 1934.
- Danes, F. Optimisation of measurements with radiation counters, 3356.
- D'Angeac, A. D. See Dupuy d'Angeac, A.
- Daniel, R., Haerdi, W., and Monnier, D. Determination of silicon in fuel oil by fast-neutron activation, 760.
- Danielak, R., Nowakowska, Z., and Rafałowska, H. Separation of compound preparations by column chromatography. II. Separation and determination of piperylon and dipyrone, 3217.
- Danielova, L. T., and Sevyan, T. K. Determination of monomycin in tissue, 1415.
- Danielsson, L. Anion-exchange study of elements strongly adsorbed from mixtures of sulphuric and hydrofluoric acids, 25. Separation of traces of elements from large amounts of iron by anion exchange, 147. Studies of ion-exchange separations: analysis of iron and steel, 148.
- Danilchenko, A. See Dische, Z., 301.
- Darbinyan, M. V., and Kapantsyan, É. E. Separation of bismuth and tellurium by ion-exchange chromatography, 2982.
- Dardin, V. J., jun. Multi-column gas-chromatographic analysis of propane oxidation products, 711.
- Dark, W. A. See Bombaugh, K. J., 3.
- Darrall, K. G. See Oldham, G., 3010.
- Das, B., and Shome, S. C. Gravimetric determination of bismuth with *N*-phenylbenzohydroxamic acid, 2980.
- Das, J. See Sarkar, A. K., 94, 2903.
- Das, M. K. See Majumdar, A. K., 32.
- Das Gupta, V., and Cadwallader, D. E. Acid dye method for analysis for thiamine, 2143.
- Da Silva, M. E. See Sá, F., 1425.
- Davey, A. B. C. See Leroux, J., 1083.
- Davey, E. W. See Curl, H., 2755.
- David, D. J. Suppression of interference in the determination of molybdenum by atomic-absorption spectrophotometry in an air-acetylene flame, 2447.
- Davis, E. J. Modified A.O.A.C. method for amprolium in feed concentrates, 2215.
- Davis, F. C., jun. See Groves, W. E., 2651.
- Davis, H. Co-operation in the evolution of drug methods, 1.
- Davis, J. E. See Toren, E. C., jun., 2851.
- Davis, T. C., and Petersen, J. C. Inverse GLC studies of asphalt: comparison with analyses by fractionation, 1367.
- Davison, V. L. See Scholfield, C. R., 983.
- Day, E. W., jun., Holzer, F. J., Tepe, J. B., Eckert, J. W., and Kolbezen, M. J. Determination of *s*-butylamine residues in fruit, 2191.
- Day, M., and Evans, S. Small 180°-deflection partial pressure - total pressure gauge for vacuum-system diagnosis, 2849.
- De, A. K. Potassium ethylxanthate as an extractant, 2855.
- De, P. K., and Dutt, N. K. 1,2-Di(thiocarbamoyl)-hydrazine and its derivatives as reagents. XII. Amperometric determination of metals with this and its diallyl derivative, 2864.
- Dean, J. A. See Syty, A., 1876.
- Dean, R. H., and Furley, R. J. Calibration of noisy NMR signals, 2308.
- Dean, W. K. See Kneip, T. J., 389.
- Deans, D. R. Technique for 'heart cutting' in gas chromatography, 2798.
- Deavin, J. C., Drey, R. E. A., and Foster, G. E. Chemical assay of solapson, 1523.
- Deb, A. R. Cooling device for recording u.v. absorption spectra of solids at the temperature of liquid oxygen, 1089.
- De Barros e Vasconcelos, M. See Barros e Vasconcelos, M. de.
- De Bersaques, J. Separation of nucleic acid components on tightly cross-linked Sephadex, 895. Determination of leucine aminopeptidase activity with radioactive leucinamide, 2122.
- De Boeck, R. See Boeck, R. de.
- De Boer, F. J. See Boer, F. J. de.
- De Broveto, A. G. See Gelabert de Broveto, A.
- De Bruyn, A. See Bruyn, A. de.
- Deburck, A. See Deschamps, P., 2871.
- De Camargo Fonseca Moraes, E. See Moraes, E. de C. F.
- De Carnevale Bonino, R. C. d'A. See Carnevale Bonino, R. C. d'A. de.
- Decker, R. J., and Eve, D. J. The d.c. arc in emission spectrography. I. Influence of lithium compounds as buffers, 2818.
- Decker, W. J. See Thompson, H. L., 2008.
- Decker, T. Determination of glucose in plasma, cerebrospinal fluid and urine by means of 4-bromoaniline, 821.
- Deedre, M. See Dubosq, F., 2739.
- De Deyne, V. J. R. See Deyne, V. J. R. de.
- Dedkov, Yu. M. See Savvin, S. B., 1273.
- Deeds, W. E. See Duckett, K. E., 2562.
- Deering, J. E. See Bremanis, E., 259.
- De Fabrizio, F. See Fabrizio, F. de.
- Degrad, M.-F. See Devillers, F., 1610.
- Degtyareva, O. F., and Permyakova, T. A. Spectrographic analysis for impurities in scandium and its compounds, 2393.
- Dehennin, L. See Scholler, R., 848.
- De Hoog, P. See Hoog, P. de.
- De Jong, E. See Jong, E. de.
- Dejongh, D. C., Perricone, S. C., Gay, M. L., and Korytnyk, W. Mass spectrometry of vitamin B<sub>6</sub>, 3186.
- DeKalb, E. L. See Fassel, V. A., 2404.
- De Kuck, J. G. See Kuck, J. G. de.
- De Lange, P. W. See Lange, P. W. de.
- De Langerit, J. J. A. M. van. See Langerijt, J. J. A. M. van de.
- Delarue, J. C. See Bohuon, C., 2064.
- Del Bianco, F. M., and Iesù, R. Qualitative and quantitative analysis of nitrocellulose-lacquer solvent mixtures by GLC, 785.
- De Ligny, C. L. See Ligny, C. L. de.
- Della Monica, E. S., and Holden, T. F. Comparison of toluene distillation and Karl Fischer methods for determining moisture in dry whole-milk powder, 2714.
- Delle Monache, F., Gelabert de Broveto, A., Corio, E., and Marini-Bettolo, G. B. Separation of the minor alkaloids of *Strychnos nux vomica* L., 2131.
- See also Marini-Bettolo, G. B., 1.
- Del Santo, J. See Santo, J. del.



- De Luca, L. See Righetti, P., 2675.  
 De Lucia, J. C. See Lucia, J. C. de, 373.  
 Deluzarche, A., Maillard, A., Maire, J.-C., Sommer, J.-M., and Wagner, M. Analyses of spirits by GLC, 979.  
 De Marco, A., and Mecarelli, E. Polarographic determination of ephedrine in pharmaceutical products, 1500.  
 Demay, D. See Pellerin, F., 1137.  
 Demchuk, N., and Gesser, H. D. Trapping of hydrogen and its isotopes in a fast-flowing low-pressure system, 2873.  
 Demeester, G. See Eechaute, W., 2058.  
 Dement'eva, M. I., Prokopenko, N. A., and Maiorova, R. V. GLC determination of polycarboxylic acids, 2579.  
 — See also Shefter, V. E., 3306.  
 Demetrescu, C. See Teodorescu, N., 246, 362.  
 Demus, D. Determination of polycaprolactam extract with an interferometer, 1383.  
 Denard, C. D. See Jones, I. D., 2726.  
 Den Boef, G. See Boef, G. den.  
 Dencker, S. J. See Tichý, J., 2.  
 Dencks, G. See Jentsch, D., 3.  
 Den Dool, H. van. See Dool, H. van den.  
 Denisov, E. I., Grinzaid, E. L., Nadezhkina, L. S., and Bespalkenkova, E. K. Micro-determination of oxygen in antimony sulphide, 631.  
 — See Nadezhkina, L. S., 2978.  
 Denisova, A. N. See Agasyan, P. K., 2442.  
 Den Reek, S. van. See Reek, S. van den.  
 De Planque, M. P. See Planque, M. P. de.  
 Derge, K. Identification of gas-chromatographic peaks by gas-chromatographic examination of pyrolysis products, 452.  
 Der Geest, A. C. von. See Geest, A. C. von der.  
 De Ritter, E. See Osada, M., 2692.  
 De Rivera, C. B. See Bou de Rivera, C.  
 Der Meeren, A. A. F. van. See Meeren, A. A. F. van der.  
 Der Merwe, P. van. See Merwe, P. van der.  
 De Roos, A. M. See Roos, A. M. de.  
 Der Reyden, A. J. van. See Reyden, A. J. van der.  
 Derumze, P., and Biserte, G. Chromatography of deoxyribonucleotides on a thin layer of ion exchanger, 1473.  
 Der Wegen, T. P. A. van. See Wegen, T. P. A. van der.  
 De Sá, L. M. See Sá, L. M. de.  
 Desai, M. N. See Gandhi, M. H., 143.  
 Desai, S. R., and Sudhalatha, K. K. Determination of micro amounts of beryllium in urine, 799.  
 Fluorimetric determination of traces of gallium in silicate rocks and flue-dust samples with 8-hydroxyquinoline, 2917.  
 Deschamps, P., Deburek, A., and Bonnaire, Y. Thermochemical titrations by formation of complex fluorides of iron, aluminium, copper, antimony, tin and lead, 2871.  
 Desyatkina, E. A. See Malikova, E. D., 2880.  
 Deuble, J. L. See Salim, E. F., 2694.  
 Deurloo, P. A. See Joon, K., 2410.  
 Devani, M. B., and Shishoo, C. J. Non-aqueous titration of thiacetazone with acetous perchloric acid, 937.  
 De Veerdonk, F. C. G. van. See Veerdonk, F. C. G. van de.  
 Deverell, C., and Schaumburg, K. Analysis of water-heavy water mixtures by fluorine-19 NMR, 1132.  
 Devillers, P., Lemaitre, A., and Degrand, M.-F. Determination of chemical oxygen demand, 1610.  
 DeVincenzo, J. P. See Lyman, G. E., 1477.  
 DeVoe, J. R. See Landgrebe, A. R., 584, and Pella, P. A., 1702.  
 Devoto, G. See Spano, P. F., 2067.  
 DeVries, P. F. See Scarborough, J. M., 41.  
 Devyatnin, V. A. See Mikhno, S. D., 3067.  
 Devyat'kh, G. G., Larin, N. V., and Agafonov, I. L. Mass-spectrometric analysis of silane and germane for trace impurities, 2943.  
 — Zorin, A. D., Frolov, I. F., and Runovskaya, I. V. GLC determination of traces of volatile hydrides in silane, germane and arsine, 613.  
 De Wet, W. J. See Wet, W. J. de.  
 Dewey, V. C., and Kidder, G. W. Use of Sephadex for concentration of pteridines, 1470.  
 — See also Kidder, G. W., 1054.  
 DeWolfe, M. S., Baskurt, S., and Cochrane, W. A. Automated amino-acid analysis of blood serum and plasma, 2073.  
 Dey, A. K. See Ghose, A. K., 1750, 1755, 2369.  
 Deyl, Z., Schinkmannová, L., and Rosmus, J. Chromatographic separation of 5-amino-2,4-dinitrophenyl derivatives of amino-acids, 864.  
 Deyne, V. J. R. de. Separation and identification of the isomeric monosulphonic acids of 1-naphthol by TLC, 1350.  
 — and Vettors, A. F. Techniques to reduce extraction errors in quantitative TLC, 1634.  
 De Zeeuw, R. A. See Zeeuw, R. A. de.  
 Dhaneshwar, R. G. See Athavale, V. T., 1094, 1692.  
 Diamant, B., Redlich, D. von, and Glick, D. Comparison of the phenol-reagent and the sulphobromophthalein-binding methods for determination of protein and its determination in mast cells, 328.  
 Diamond, E. M., and Levy, P. R. TLC separation of pyridinecarboxylic acids, 318.  
 Diamond, P. F. TLC determination of phenols *p*-substituted with C<sub>1</sub> to C<sub>12</sub> n-alkyl groups, 2557.  
 Díaz, C. See Morales B., A., 109.  
 Di Bello, C., and Celon, E. Chromatographic behaviour of ureas, thioureas, biuret derivatives and related compounds, 735.  
 Di Carlo, V. See Vogel, W. H., 2068.  
 Di Cerbo, M. See Cerbo, M. di.  
 Dichiaro, J. V., Bate, R. A., Johnson, W., and Keller, R. A. TLC of *N*-substituted maleimides and *N*-chlorophenylsuccinimides on silica gel: stereochemical factors, 3084.  
 Dick, Y. P. See Martins, P. M., 1921.  
 Dickens, P., König, P., Schmitz, K.-H., and Zimmermann, K. Immersion mould for sampling for spectrophotometric and gas analysis of steel, 666.  
 Dicks, G. J., and Ellis, A. C. TLC detection of amphetamine in urine, 1418.  
 Dickinson, G. W. See Fassel, V. A., 2292.  
 Diefenderfer, A. J. See Evilia, R. F., 1690.  
 Diehlmann, D. See Alter, J., 1587.  
 Diemair, W., and Polster, A. Tannins in red wine. II. Properties and separation, 391.  
 Dietrich, K. See Reinisch, G., 1384, 1971.  
 Dietz, W. A. See Brown, R. A., 1358.  
 Di Ferrante, N. M. Separation of mucopolysaccharides from urine, 308.  
 Di Ieso, F. See Ieso, F. di.  
 Dijk, J. H. van. Quantitative continuous extraction and collection of TLC spots without damaging the layer, 3.  
 — and Mijs, W. J. Separation of phenols as a result of vapour-induced modification of the adsorbent in thin-layer and column chromatography, 3.  
 Dijkhuis, I. C. Determination of anhydrotetracyclines in tetracycline hydrochloride, 2687.  
 Dils, R. See Smith, S., 2622, and Watts, R., 2621.

- Dimitrov, G. See Burgudzhiev, Z. T., 2293.
- Dimitrov, Kh. See Petsev, N., 1068.
- Di Modica, G. See Marzona, M., 3104.
- Dinneen, L. C. See Christianson, A. H., 1623.
- Dinnin, J. I. Atomic-fluorescence spectrophotometric detection of aluminium, titanium, chromium, zirconium and palladium using a hot hollow-cathode lamp, 33.
- and Helz, A. W. De-mountable hot hollow-cathode lamp as excitation source in atomic-fluorescence spectrophotometry, 471.
- Dirheimer, G. See Remy, P., 1475.
- Dirian, G. See Commissariat à l'Énergie Atomique, 2874.
- Dirks, O. B., and Cox, F. H. Fluoride determination in fluoridated drinking water, 1009.
- See Cox, F. H., 3133.
- Dische, Z., and Danilchenko, A. Modification of two colour reactions of hexoses with cysteine and sulphuric acid, 301.
- and Rothschild, C. Two modifications of the carbazole reaction of hexuronic acids for the differentiation of polyuronides, 303.
- Di Simone, L., and Frascchetti, F. Gas-chromatographic determination of succinodinitrile in pharmaceuticals, 1096.
- Dissinger, O. See Witte, K., 3.
- Dittmann, J. Separation of phenols and phenolic acids by TLC on cellulose, 3143.
- Dittrich, S. Influence of chemical nature of the sample on its limit of detection by exposure of the chromatogram to iodine vapour, 1630.
- Ditzel, E. F., and Giddings, L. E., jun. Computer method for automatic reduction of spectroscopic data, 1658.
- Diver, M. J. See Mitchell, W. D., 841.
- Diviš, J. See Zvěřina, V., 1962.
- Dixon, R. A. See Robinson, L. R., jun., 3278.
- Dmitrieva, G. F. See Reshechkova, A. A., 2909.
- Dmitrieva, I. B. See Malikova, E. D., 2880.
- Dmitrieva, V. N., and Bezuglyi, V. D. Oscillopolarographic determination of the stereoisomeric composition of 1,4-distyrylbenzene, 1342.
- Dmitrovskii, A. A., and Eremina, G. V. Separate determination of vitamin-A aldehyde and vitamin-A acid, 899.
- Dobbins, R. A. Remote size measurements of particulate products of heterogeneous combustion, 1729.
- Dobbs, H. E. Oxygen-flask apparatus for the assay of tritium and carbon-14, 1035.
- Dobiášová, L., Hlasivcová, N., and Novák, J. Determination of fluoride in alkaline-earth titanates, 1250.
- Dobkina, B. M., and Sazikova, G. B. Photometric determination of tungsten and of molybdenum with toluene-3,4-dithiol in tantalum and niobium and their pentoxides, 1842.
- Dobrecky, J., and Carnevale Bonino, R. C. d'A. de. Paper-chromatographic separation of dyes permitted by the European Economic Community, 381.
- Docherty, A. C. Automated sampling and analysis of compound fertilisers, 3264.
- See also Skinner, J. M., 2208.
- Dodds, H. L. H. See Headridge, J. B., 1747.
- Doelle, H. W. Separation of micro amounts of acetone, C<sub>1</sub> to C<sub>7</sub> alcohols and biacetyl by GLC, 820.
- Doherty, J. See Baron, R. L., 2190.
- Dohrmann Instruments Co. Improved electrolytic coulometric-titration apparatus, 1700.
- Dokládalová, J., and Machova, I. Selectivity of the sulphur dioxide determination by the West and Gaekke method, 639.
- and Staňková, O. The Schiff reaction with use of combined sulphur dioxide, 1925.
- See also Máchová, I., 1204.
- Dolejs, I. See Altmann, H., 1471.
- Doležal, J. See Beran, P., 1201, 2455, Blanický, P., 658, Gürtler, O., 1257, and Krajina, A., 1872.
- Dolgorukova, G. S. See Pastukhova, M. M., 1211.
- Dolinsky, M. See Wenninger, J. A., 1371, 1372.
- Dollman, G. W. Determination of cobalt and nickel in cobalt-nickel magnetic films: highly specific colorimetric method for cobalt, 3029.
- Dolníková, E. See Stankoviansky, S., 2379.
- Domagk, G. F., and Schlicke, H. H. Colorimetric determination of uric acid with urate oxidase and peroxidase, 2639.
- Domrachev, G. A. See Subbotina, A. I., 2401.
- Donaldson, E. M., Fagerlund, U. H., and Schmidt, P. J. Fluorimetric determination of hydrocortisone in small quantities of salmon plasma, 3152.
- Donati, J. R., Pascal, B., and Renouprez, A. J. Measurement of granulometry and porosity of solids by central X-ray scattering: comparison of results from nitrogen adsorption and electron microscopy, 1730.
- Dono, J. M. See Owades, J. L., 2200.
- Donoso, G., Tapia, P., and Santa Ana, M.-A. Oscillopolarographic detection and determination of lead, 93.
- Dool, H. van den. Fatty acid ester-hydrocarbon retention index correlation trial, 454.
- Doornbos, D. A. Determination of L-cysteine, L-cysteine hydrochloride, D-penicillamine, D-penicillamine hydrochloride and acetyl-D-penicillamine: critical review of methods of determination, 326.
- Dörfler, G. Quantitative evaluation of alloy microstructures by micro-probe analysis, 1097.
- Dorman, L. See Sax, S. M., 280.
- Dorogov, V. V. See Vaver, V. A., 2041.
- Dorset, R. S. See Gaddy, R. H., 2457.
- Doshi, G. R. Alkaline-earth phosphate as carrier for the determination of trace elements cobalt, zinc and uranium in sea-water, 1017.
- Doss, M. See Oette, K., 3147.
- Dotreppe-Grisard, N., and Syberg, A. Extraction and determination of toxic substances in plastic materials intended for use with potable water, 1599.
- Dotti, L. B. See Chen, T., 1993.
- Dow Chemical Co. Process for the gas-chromatographic separation of gases and/or vapours, 3303.
- Downing, D. T., and Greene, E. S. Rapid determination of double-bond positions in monoenoic fatty acids by periodate-permanganate oxidation, 1928.
- Doyle, T. D., and Levine, J. Selection of partition chromatographic systems from distribution diagrams; determination of dextromethorphan in cough syrups, 1.
- Dozy, A. M., Kleihauer, E. F., and Huisman, T. H. J. Studies on the heterogeneity of haemoglobin. XIII. Chromatography of various human and other animal haemoglobin types on DEAE-Sephadex, 3180.
- Drăgulescu, C., and Pirlea, M. Polarographic determination of vanadium, 2986.
- Drăgușin, I. Determination of fungicidal organomercury compounds. IV. Volumetric micro-determination of phenylmercury acetate in technical or formulated fungicides, 407.



- Drăgușin** and **Gavriliuc, A.** Volumetric micro-determination of sulphur in coal and petroleum products, 260.
- Drahovzalova, M.** See **Litomiský, J.**, 612.
- Dranitskaya, R. M.** See **Liam-Ngog-Thu**, 2916.
- Dratz, E. A.** See **Klein, M. P.**, 3331.
- Dray, F., Mowszowicz, I., and Ledru, M.-J.** Identification and determination of 17 $\alpha$ -hydroxyandrost-4-en-3-one in the sulphate fraction of plasma of normal men, 2056.
- Drelich, J. W.** See **Grob, R. L.**, 1063.
- Dressler, M., and Krejčí, M.** Gas-chromatographic analysis with pyrolysis. I. Theory and technique, 1060; II. Analytical applications, 1637.
- Drew, H. D.** See **Fitzgerald, J. M.**, 1107.
- Drey, R. E. A.** See **Deavin, J. C.**, 1523.
- Drost, K.** See **Lutomski, J.**, 3206.
- Drost, R. H., and Reith, J. F.** Identification of substances in toxicological analysis with use of the Feldstein extraction system, TLC and u.v. spectrophotometry. I. Basic substances, 2602.
- Drozov, V. A.** See **Kreshkov, A. P.**, 1208.
- Drujan, B. D.** Determination of catecholamines and their metabolites, 3157.
- Drury, E.-J. E.** See **Herting, D. C.**, 839, 1480.
- Drushel, H. V., and Sommers, A. L.** Isolation and characterisation of sulphur compounds in high-boiling petroleum fractions, 1361.
- Drwiega, I.** Investigation into the choice of titrant for potentiometric determination of rhenium, 3013.
- Dryer, R. L.** System for esterification of higher fatty acids, 829.
- D'Souza, A. A., and Shenoy, K. G.** Colorimetric determination of potassium guaiaacolsulphonate in pharmaceutical preparations, 1529.
- Dubanský, A., and Gottstein, O.** Volumetric determination of radiogenic argon in dating of minerals, 2345.
- Dubey, P. S., and Tandon, K. N.** Adsorption indicators in the titration of oxalate with lanthanum, lead and mercury<sup>I</sup>, 3069.
- Dubois, J.** X-ray fluorescence analysis by using a thin deposit, 1654.
- Dubois, J. E.** Electrochemical methods, particularly biamperometry, for quantitative analysis, 2322.
- and **Lacaze, P. C.** Interpretation and description of biamperometric and bipotentiometric curves: new numerical system, 2323.
- Dubois, L., Zdrojewski, A., Baker, C., and Monkman, J. L.** Improved determination of benzo[a]pyrene in air, 2224.
- Dubosq, F., and Dedde, M.** Identification, separation and determination of phenoxyalkanoic acids by GLC, 2739.
- Duckett, K. E., and Deeds, W. E.** Use of a laser in single-fibre infra-red micro-spectroscopy, 2562.
- Ducros, M.** See **Chovin, P.**, 2530.
- Dudienzer-Priu, M.** See **Mestres, R.**, 956, 1561.
- Dudzík, Z.** See **Klera, M.**, 2134.
- Dudziński, A. E.** Specific spray sequence for detection of free fatty acids, 1438.
- Duev, L. T.** See **Chupakhin, M. S.**, 1763.
- Duff, G. M. S.** See **Wilson, H. N.**, 1111.
- Duffey, D.** See **Smathers, J. B.**, 1704.
- Duffield, A.-M., Craig, J. C., and Kray, L.-R.** Use of the mass spectrometer in the identification of phenolic derivatives of phenothiazines, 2693.
- Duffy, J. R., and Sheltoon, P.** Determination of 2,4-D and its butoxyethyl ester in oysters by GLC, 299.
- DuFrane, J. K.** See **Romel, W. C.**, 2119.
- Dugan, R. E., Rasson, E., and Porter, J. W.** Separation of water-soluble steroid and carotenoid precursors by column chromatography on diethylaminoethylcellulose, 2630.
- Duk, B., Kwapniewski, Z., and Śliwiok, J.** Application of Variamine blue and cupric acetate for the detection of amino-acids by TLC, 3167.
- Đulák, K., Kováč, J., and Rapoš, P.** Column and thin-layer chromatographic determination of pyrazon, 1582.
- Dumas, C.** See **Avon, M.**, 2337.
- Dümecke, G., and Gersöne, H.** Use of a direct spectral analyser in the quantitative analysis of silicates, 2948.
- Duncumb, P., and Reed, S. J. B.** Calculation of stopping power and backscatter effects in electron-probe micro-analysis, 1097.
- Dunn, P., and Kelso, A. G.** Determination of pentachlorophenyl laurate using electron-capture GLC, 2748.
- Dunn, R.** See **Salama, C.**, 1392.
- Dupont, A.** Determination of hydroxyproline in urine, 324.
- Dupuy d'Angéac, A., and Sallei, J.-P.** Application of electrophoresis in a non-uniform field to concentration of dilute solutions of proteins, 2086.
- Durán-López, A.** Nomogram for gasometric determination of carbon in steel, 669.
- Duraš, S.** See **Janák, J.**, 2511.
- Duren, S. C.** See **Hoover, W. L.**, 1579.
- Durie, R. A., and Milne, J. W.** Reaction of anhydrous sodium carbonate during preparation of potassium chloride pressed discs, 1668.
- Durišínová, Ľ., and Belluš, D.** TLC of 2-hydroxybenzophenones, 3080.
- Durnin, J., and Ridal, K. A.** Determination of retained austenite in steel by X-ray diffraction, 2473.
- Durst, R. A., and Taylor, J. K.** Modification of the fluoride-activity electrode for microchemical analysis, 134. Modified linear null-point potentiometry, 503.
- Duruz, J. J., and Monnier, R.** Differential thermal analysis of volatile substances of high melting-point: application to the system cryolite - alumina, 1796.
- Dushechkin, A. V.** See **Myagchenkov, V. A.**, 2574.
- Dušíňský, G., and Antolík, P.** Oscilloscopic behaviour of Ceperin, 1508.
- **Machovičová, F., and Tyllová, M.** Simultaneous determination of colchicine and demecolcine, 354.
- Dutheil, J.** See **Avon, M.**, 2337.
- Dutt, J.** See **Sharma, L. R.**, 2845.
- Dutt, N. K., and Bhattacharjee, B. K.** 1,2-Di-(thiocarbamoyl)hydrazine and its derivatives as analytical reagents. XIII. Amperometric determination of copper and palladium with 1-allyl-(thiocarbamoyl)-2-thiocarbamoylhydrazine, 2864.
- See also **De, P. K.**, 2864.
- Dutta, J.** See **Ghosh, Anita**, 2716.
- Dutta, K. N.** See **Purkayastha, B. C.**, 595.
- Dutta, P.** See **Mukherjee, S. N.**, 2490.
- Dutta, P. B.** See **Mukherjee, S. N.**, 2490.
- Dutta, S. P.** See **Barua, A. K.**, 1433.
- Dutton, H. J.** See **Scholfield, C. R.**, 983.
- Dutton, J. W. R., and Harvey, B. R.** Studies of liquid radioactive effluent discharged to the aquatic environment from nuclear power stations: sequential analysis of major metallic radio-isotopes, 2768.
- Duyckaerts, G.** See **Schoumacker, C.**, 1184.
- D'yachenko, N. P., Negrebetskaya, I. V., and Chuiko, V. T.** Determination of traces of zinc in copper salts after concentration by co-precipitation, 2884.



- D'yachenko, N. S. See Ovcharenko, F. D., 430.
- Dybczynski, R. Influence of temperature on tracer-level separations by ion-exchange chromatography, 542.
- See also Wódkiewicz, L., 2400.
- Dyck, W. Adsorption of silver on borosilicate glass: effect of pH and time, 2361.
- Dyer, F. F., Bate, L. C., and Strain, J. E. Three-dimensionally rotating sample holder for 14-MeV neutron irradiations, 1707.
- See also Bate, L. C., 3373.
- Dýmov, A. M. See Busev, A. I., 4.
- Dynako, A. See Braman, R. S., 2274, and Putscher, R. E., 15.
- Dzhiyanbaeva, R. Kh. See Kamaeva, G., 1142, Martirosov, E. E., 3031, and Sharipova, Sh. T., 3038.
- Dzierzynski, M. See Côme, G. M., 222.
- E**
- Eakins, J. D. Determination of plutonium alpha-activity in urine by surface adsorption and ion exchange, 2000.
- Ebel, H. See Wagendristel, A., 1731.
- Ebel, J. P. See Gangloff, J., 3183, and Remy, P., 1475.
- Ebing, W. GLC column for pesticide analysis, 2793. Detector-adaptor for gas chromatography in glass columns with Aerograph equipment, 3308.
- Ebner, M. R. See Brown, H. H., 344.
- Eck, C. F. See Rutherford, W. M., 2250.
- Eckert, J. W. See Day, E. W., jun., 2191.
- Eckschlager, K. See Wagnerová, D. M., 1226.
- Edge, R. A. Emission-spectrographic monitoring of the effluent fractions from the ion-exchange chromatography of silicate rocks, 2949.
- Edwards, J. W. See Pierce, T. B., 76.
- Eechaute, W., Demeester, G., and Leusen, I. Simple chromatographic determination of traces of 17,21-dihydroxy-20-oxosteroids in urine, 2058.
- Efer, J., Quaas, D., and Spichale, W. Determination of organic impurities in hydrochloric acid. I. Gas-chromatographic determination of chlorinated methane, 2458.
- Effland, M. J. See Scott, R. W., 302.
- Efimov, B. N. See Skurikhin, I. M., 266, 3103.
- Efim'ychev, V. S. See Tumanov, A. A., 75.
- Egan, H. I.U.P.A.C. commission on the development, improvement and standardisation of methods of pesticide residue analysis, 386. I.U.P.A.C. commission on terminal residues: report, 387.
- Egli, K. L., and Romano, A., jun. Determination of glycine and nicotinic acid in drug mixtures, 2144.
- Ehmann, W. D. See Tanner, J. T., 632.
- Ehrlich, G. Objective estimation of detection possibilities in emission spectrography. III. Evaluation of multiple determinations, some of which are below the detection limit, 466.
- Eichhoff, H.-J. See Köhler, M., 1003.
- Eichler, D. See Böhme, H., 2704.
- Eid, M. I. A. See Meijer, J. W. A., 3.
- Einspruch, N. G. See Antcliffe, G. A., 3365.
- Eisdorfer, I. B., Warren, R. J., and Zarembo, J. E. Spectroscopy of amines of pharmaceutical interest, 2676.
- See also Warren, R. J., 814, 1487.
- Eisenbrand, J., and Becker, G. Increase in water solubility of benzo[a]pyrene by the addition of caffeine. II. Effects of added organic acids, 1352.
- Eisenbrand, and Hauprich, H.-E. Standard for fluorimetric measurements, 1092.
- Eisenman, G. Similarities and differences between liquid and solid ion-exchangers and their usefulness as ion-specific electrodes, 2840.
- Eisner, U., Rottschäfer, J. M., Berlandi, F. J., and Mark, H. B., jun. Applications of semi-permeable ion-exchange membranes to trace analysis for metal ions by electrochemical and neutron-activation techniques, 492.
- Elbeih, I. I. M., and Abou-Elnaga, M. A. Chromatographic separation of iron<sup>III</sup> and its spectrophotometric determination, 141.
- Elbert, W. C. See Sawicki, E., 413.
- Electronic Switchgear (London) Ltd. Improvements in or relating to liquid-conductivity measuring cells, 1701.
- Elema, E. T. See Os, F. H. L. van, 3252.
- Ellessawi, M. A., and El-Refai, A. R. Determination of carbaryl residues on some vegetable crops after various harvest times, 409.
- Elfers, L. A., and Herman, M. Device for transfer and dilution of radioactive gases, 1703.
- El-Ghamry, M. T. See Dagnall, R. M., 1817.
- Elinson, S. V., Savvin, S. B., and Mirzoyan, N. A. Photometric determination with chlorsulphophenol S of micro amounts of niobium in metals and alloys, 2437.
- El Kouri. See Kollar, 1883.
- Ellert, H., Ceglarski, R., and Regosz, A. Determination of 2-diethylaminoethyl acetylsalicylate hydrochloride. II. Photometric and visual titrations in non-aqueous media, 929.
- Ellingboe, J. L., and Ruybal, C. N. Determination of *o*-toluic and phthalic acids in aqueous solutions, 243.
- Ellinger, G. M. See Clarke, E. M. W., 876.
- Elliott, L. W. See Sheppard, A. J., 1931.
- Elliott, R. M. Single-focusing magnetic-deflection mass spectrometers, 2849.
- Ellis, A. C. See Dickes, G. J., 1418.
- Ellis, M. J. See Poxon, D. W., 1946.
- Ellison, K. See Comstock, E. G., 2022.
- Elman, G. J. See McConnell, D. G., 1043.
- El-Masry, A. R. See Fairbairn, J. W., 1497.
- El-Refai, A. R. See Ellessawi, M. A., 409.
- Elrod, L. H. See Anderson, N. G., 1034.
- El-Shahat, M. F. See Tobia, S. K., 567, 1117.
- Elving, P. J. Instrumental and automated analytical techniques for water-quality determinations, 2225.
- See also Hall, D. A., 1093.
- Élyashberg, M. E. See Sokolov, A. G., 2510.
- Emasheva, G. N. See Stepin, V. V., 2994.
- Emerson, D. E. See Seitz, C. A., 2239.
- Emery, A. E. H., Moores, G. E., and Hodson, V. Determination of lactate dehydrogenase isoenzymes with urea, 2108.
- Emmerich, A. Determination of invert sugar with 3,6-dinitrophthalic acid in the presence of excess of sucrose, 1537.
- Emnéus, N. I. A. Gel filtration of viscous solutions, 2245.
- Emura, S., and Sugikawa, S. Remotely operated polarographic determination of uranium in process waste solutions, 1606.
- Engel, C. R., and Sawicki, E. TLC for the separation of aza-arenes and its application to air pollution, 1005.
- See also Sawicki, E., 413, 755, 1596.
- Engel, J. See Falgoux, D., 3.
- Engelbrecht, R. M. See Willis, D. E., 213, 1059.
- Engelhard Industries, Incorporated. See Engelhard Minerals & Chemicals Corporation.

- Engelhard Minerals & Chemicals Corporation.** Apparatus for the separation of a gas, particularly hydrogen, 3289.
- Engelmann, C.** Activation analysis with gamma-photons, 1708.
- Engelsman, J. J., Knaape, J., and Visser, J.** Volumetric determination of the ratio of oxygen to uranium in uranium oxides, 2935.
- Engst, R.** See Kretschmann, F., 2168.
- Epimakhov, V. N.** See Tserkovnitskaya, I. A., 2414.
- Eppert, G.** See VEB Leuna-Werke 'Walter Ulbricht', 3091.
- Eppley, R. M.** Screening method for zearalenone, aflatoxin and ochratoxin, 2183.
- **Stoloff, L., and Campbell, A. D.** Assay of aflatoxins in groundnut products including preparatory separation and confirmation of identity, 2181.
- Epstein, C. J.** See Tishler, P. V., 2282.
- Erdey, L., Marik-Korda, P., and Liptay, G.** Gravimetric determination of copper<sup>II</sup> with 4-aminobenzoic acid, 1773.
- Eremina, G. V.** Chromatographic separation and determination of vitamin A and its derivatives, 2691.
- See also Dmitrovskii, A. A., 899.
- Eremina, G. V.** See Gibalo, I. M., 111.
- Erichsen, R. W.** See Johannesen, B., 363.
- Ernak, L. D.** See Nazarenko, V. A., 2908.
- Ermer, E.** Determination of proteolytic activity of trypsin-containing medicinal preparations, 942.
- Ernest, G.** Separation of metallic impurities from bright-nickel plating-baths by ion exchange, 167.
- Ernst, W.** TLC separation and determination of uronic acids and their lactones, 2231.
- Errock, G. A.** Design of double-focusing magnetic-deflection instruments, 2849.
- Erslova, K. N., and Orlova, G. M.** Photometric analysis of non-metallic inclusion residues from steel, 3026.
- Espagno, L.** See Chambu, C., 3337.
- Esposito, G., and Faelli, A.** Determination, by ion-exchange chromatography, of synthetic 2-methylalanine, 2079.
- Essential Oil Association of the U.S.A.** Revised and new standards of the Essential Oil Association of the U.S.A., 1370.
- Esser, R. J. E.** Effect of detector volume on recorded shape of chromatographic peaks obtained by spectrophotometric detection, 3.
- Estep, P. A., Kovach, J. J., and Karr, C., jun.** Quantitative i.r. multi-component determination of minerals in coal, 2488.
- Estevez, V.** See McIsaac, W. M., 1355.
- Études et Recherches Scientifiques et Industrielles.** Improved chromatographic column, 3291.
- Evans, C. D.** See Hoffmann, R. L., 1042, and McConnell, D. G., 1043.
- Evans, H. B., and Shiro Mori.** Amperometric determination of sulphur in plutonium sulphide and plutonium-uranium sulphide ceramic fuels, 1814.
- Evans, J. W.** See Stoner, G. A., 830.
- Evans, M. B., and Smith, J. F.** GLC in qualitative analysis. VII. Role of the support in retention measurements, 1062.
- Evans, M. E., Long, L., jun., and Parrish, F. W.** Separation of glycopyranosides on ion-exchange resins, 3064.
- Evans, S., and Collins, R. D.** Fast-scan mass spectrometer for residual-gas analysis and the examination of effluents from GLC columns, 2849.
- See also Day, M., 2849.
- Evans, W. H.** Complexometric determination of aluminium and total iron in silicate and other rock material, 589. Determination of small amounts of fluorine in rocks and minerals, 657.
- Evans, W. J., McCourtney, E. J., and Carney, W. B.** Micro-calorimeter, 1716.
- Eve, D. J.** See Decker, R. J., 2818.
- Evers, R. L.** See Fearheller, W. R., jun., 729.
- Everson, W. L.** Thermometric titrator with direct temperature read-out, 1719.
- and **Ramirez, E. M.** Determination of fluoride by thermometric titration, 1248.
- Evilia, R. F., and Diefenderfer, A. J.** Alternating-current polarograph with simplified phase-selective detection, 1690.
- Evstratova, K. I., Kurov, V. I., Goncharova, N. A., Ivanova, A. I., and Solomko, V. Ya.** Acid-base titration in acetone medium, 2522.
- Evtushenko, E. V.** See Ovodov, Yu. S., 1321.
- Ewart, J. A. D.** Amino-acid analyses of cereal-flour proteins, 945.
- Eybl, V.** See Šykora, J., 3236.

## F

- Fabrie, C. C. M.** See Munnik, J., 3.
- Fabrizio, F. de.** Spectrophotometric determination of diphenhydramine in a cough mixture, 359.
- Fabry, J.** Re-assessment of the GLC determination of lower fatty acids in rumen fluid, 2032.
- Fadeeva, L. A.** See Zakhariya, N. F., 1173.
- Fadeeva, V. I., and Avvad, A. R.** Extraction of scandium by acetylacetone, 596.
- Faelli, A.** See Esposito, G., 2079.
- Faes, M. H.** See Knockaert, O. E., 2002.
- Făgășan, T.** See Ciuhandu, G., 1001.
- Fagerlund, U. H.** See Donaldson, E. M., 3152.
- Fain, E. E.** See Vitushkina, I. N., 3005.
- Fairbairn, J. W., and El-Masry, S.** TLC determination of noscapine and papaverine in opium and in pharmaceutical preparations, 1497.
- Fakeeva, O. A.** See Bozhevol'nov, E. A., 2403.
- Falgoux, D., Mangin, P., Engel, J., and Granger, C.** Comparison of techniques for the fractionation of polyoxyethylene glycols by GLC and TLC, 3.
- Falk, F.** RFAP as GLC liquid phase for separation of ricinoleic acid and its impurities, 726. Comparative studies on the gas-chromatographic resolving properties of polyesters from ethanediol and aliphatic dicarboxylic acids, 1065.
- Falk, H. L.** See Fishbein, L., 819, 2850.
- Faraglia, G., Roncucci Fiorani, L., Lassoandro Pepe, B., and Barbieri, R.** Complexes of organo-metallic compounds. XVII. Paper electrophoresis of organothallium<sup>III</sup> chloride complexes, 741.
- Farina, B.** See Mezzasoma, I., 2098.
- Faris, J. P.** Separation of the rare-earth metals by anion exchange in water-solvent mixtures in the presence of lactic acid, 2924.
- Farmer, V. C.** See Yariv, S., 523.
- Farrier, J. P.** See Merrills, R. J., 1449.
- Fassel, V. A.** Separated nitrous oxide-acetylene flame as an atom reservoir in thermal emission spectroscopy. [II], 3329.
- and **Dickinson, G. W.** Continuous ultrasonic nebulisation and spectrographic analysis of molten metals, 2292.
- **Jasinski, R. J., DeKalb, E. L., and Lucas, W. V.** Thorium content of primary-standard-grade ammonium ceric nitrate: an optical emission spectrographic study, 2404.



- Fauth, M. I., and Richardson, A. C. Spectrophotometric determination of nitrogen dioxide in nitroglycerin, 1400.
- Fauvel, J.-E., Pazderski, A., and Blouri, B. Separation and identification of long-chain mono- and di-olefins by GLC, 1313.
- Favell, D. J. See Usher, C. D., 2717.
- Favert, M. See Truffert, L., 703.
- Favretto, L., and Favretto Gabrielli, L. Determination of caffeine in roasted de-caffeinated coffee by potentiometric acid - base titration in non-aqueous medium, 3253.
- Favretto Gabrielli, L. See Favretto, L., 3253.
- Fawkes, J., Thomas, R. O., and Fishbein, L. Micro-scale TLC sublimation apparatus, 1635.
- See also Fishbein, L., 819.
- Fazio, T., Howard, J. W., and Sandoval, A. Determination of dilauryl 3,3'-thiodipropionate and other antioxidants by a modified sublimation technique, 2189.
- See also Howard, J. W., 2170, 2734.
- Feairheller, W. R., jun., and Evers, R. L. Separation and collection of acyl halides by GLC, 729.
- Fechner, G. See Führer, G., 1559.
- Fecko, J., and Seidel, R. Photometric and argentimetric determinations of 2-diethylaminoethyl acetylsalicylate hydrochloride, 930.
- Fedeli, E. See Lanzani, A., 990.
- Feders, M. B. See Swaim, W. R., 883.
- Fedorouko, M., Königstein, J., and Bullová, M. Indirect polarographic determination of aldehydes in the presence of ketones, 2515.
- Fedorov, A. A., Ozerskaya, F. A., and Strebulaeva, E. N. Use of a photo-electric titrimeter in the complexometric determination of calcium oxide in chromium ores and concentrates, 1239.
- Fedorova, N. D., Kurbatova, V. I., Zolotavin, V. L., Isupova, M. I., and Zharikova, V. K. Chromatographic separation of vanadium, molybdenum, tungsten and niobium from fluoride solutions, 1757.
- Fedorovskaya, N. P., and Miesserova, L. V. Determination of vanadium and chromium in solid-fuel ash, 3044.
- Fedotova, L. A., and Voronkov, M. G. Determination of boron in complexes of heterocyclic nitrogen-compounds with boron trifluoride, 3054.
- Fedukhina, G. P. See Kreshkov, A. P., 2900.
- Feigl, F., and Ben-Dor, L. Applications of the formation and behaviour of sulphotellurate in spot-test analysis, 1126.
- and Caldas, A. Test for the detection of arsenic, 103.
- and Libergott, E. Tests for elementary sulphur and elementary arsenic based on the formation of arsenic sulphides, 1844.
- Fejér-Kossey, O. Separation of ten tobacco alkaloids by TLC, 1450.
- Feldman, E. G. Official compendia and drug standards, 1.
- Feldman, F. J. See Christian, G. D., 2862.
- Fell, B. See Bendel, E., 1312.
- Fellers, F. X. See MacDonald, W. B., 2081.
- Fenimore, D. C. See Simmonds, P. G., 445.
- Fennell, T. R. F. W. See Christopher, A. J., 1307.
- Feofanova, V. V. See Stashkova, N. V., 1221.
- Ferenčíková, J. Separation of aldosterone from some corticosteroids by high-voltage paper electrophoresis, 844.
- Ferguson, J. Technique for concentrating polymer solutions, 3121.
- Ferguson, M. R. See Stewart, J. H., jun., 1811.
- Fernandez, F. See Manning, D. C., 2904.
- Fernandez, J. G. See Mefferd, R. B., jun., 3165.
- Fernández Noriega, F. See Burriel-Martí, F., 2432.
- Ferrero, N. See Lucia, J. C. de, 373.
- Ferri, J. A. See Wiley, R. M., 426.
- Ferro, C., Moretti, S., and Patimo, C. Non-destructive determination of the ratio of oxygen to uranium in sintered ceramic fuel discs, 2936.
- Fer'yanchich, F. A. Microchemical analysis of tantaloniobates, 1288. Polarographic determination of selenium and tellurium in native gold, 2364.
- Fetter, F. See Altmann, H., 1471.
- Feuerstein, H. Determination of copper, silver, gold, zinc and arsenic in human skin by neutron-activation analysis, 282.
- Fidelus, J. See Skóra-Ziętek, M., 3138.
- Fiedler, K. R. See Rebertus, R. L., 1333.
- Fields, M. L. See Rotman, Y., 2070.
- Fierla, R. See Mayer, V., 2472.
- Fierro, C. F. See Fierro Fierro, C.
- Fierro Fierro, C. See Simal Lozano, J., 1543.
- Filippov, M. P. See Khariton, Kh. Sh., 2520.
- Filippov, S. N., Kovtunenkov, P. V., and Bundel', A. A. Determination of excess of barium in non-stoichiometric barium oxide, 2373.
- Fini, G. D. See Dalla Fini, G.
- Finkel, J. M. Fluorimetric estimation of mercaptopyrrole in serum, 1423.
- Fintschenko, P. See Houle, M. J., 1323.
- Fiorani, L. R. See Roncucci Fiorani, L.
- Fiorani, M., and Magno, F. Study of silver - silver sulphide and silver - silver thiocyanate electrodes: coulometric production of sulphide and thiocyanate ions, 507.
- See also Magno, F., 2966.
- Fiore, J. V. See Jacin, H., 823.
- Fiori, A., and Marigo, M. Detection of (+)-tubocurarine, gallamine, decamethonium iodide and succinylcholine in biological materials, 809.
- Fioriti, J. A., and Sims, R. J. Spray reagent for the identification of epoxides on thin-layer plates, 3145.
- Firsching, F. H., Aton, G. W., Bakowski, E. S., Klotz, M. R., Meggos, H. N., Melm, G. D., Paul, T. R., Smith, M. J., and White, J. D. Logarithmic distribution coefficients of rare-earth-metal compounds fractionally precipitated from homogeneous solution, 1799.
- Firth, J. G. See Minister of Power [U.K.], 1616.
- Fischer, W. G. Pyrolytic gas chromatography. II, 776; III, 776.
- Fischl, J., Segal, S., and Rabiah, S. Micro-determination of phosphatases with phenolphthalein diphosphate as substrate, 912.
- Fish, F. See Caddy, B., 1503, 1504.
- Fishbein, L. TLC of isomeric chlorophenyl esters of *m*-fluorosulphonylbenzoic acid, 3086.
- and Falk, H. L. Chromatography of methylenedioxyphenyl compounds. II. Alkaloidal derivatives: review, 2850.
- Falk, H. L., and Kotin, P. Chromatography of methylenedioxyphenyl compounds. I. Simple and pesticidal derivatives: review, 2850. Chromatography of ureas, thioureas and related mammalian metabolites: review, 2850.
- Fawkes, J., Falk, H. L., and Thompson, S. TLC of rat bile and urine following intravenous administration of [methylene-<sup>14</sup>C]trypital, 819.
- and Thomas, R. O. TLC separation and detection of 1-acetylthienimines, 230.
- Zielinski, W. L., jun., and Thomas, R. O. GLC of carbamates. X. *N*-(Toluene-*p*-sulphonyl) derivatives, 749.
- See also Fawkes, J., 1635, and Zielinski, W. L., jun., 444, 996.



- Fishbein, W. N.** Simple, sensitive and specific colorimetric assay for dihydroxyurea, 3155.  
— See also **Streeter, C. L.**, 2523.
- Fisher, C. L., and Nixon, J. C.** Determination of lactate dehydrogenase isoenzymes with a Micro-zone cellulose acetate system, 2110.
- Fisher, D. E.** See **Berkey, E.**, 187.
- Fisher, D. J.** See **Shults, W. D.**, 495.
- Fisher, E. E.** See **Huber, C. N.**, 2031.
- Fisher, J. F., and Hall, J. L.** Polarographic study of complexes of copper<sup>II</sup> ion with ammonia and various ethyl-, ethanol- and ethylethanol-amines, 46.
- Fisher, L. K.** See **Romani, R. J.**, 1033.
- Fisher, W. D.** See **Anderson, N. G.**, 1034.
- Fishman, J., Gurney, O., Rosenfeld, R. S., and Gallagher, T. F.** Analysis for oestrogen metabolites by isotope derivative formation and by fluorimetry, 2052.
- Fishman, M. J., and Mallory, E. C., jun.** Determination of molybdenum in fresh water: comparison of methods, 3277.  
— See also **Midgett, M. R.**, 2228.
- Fishman, W. H., Inglis, N. R., and Ghosh, N. K.** Distinctions between intestinal and placental isoenzymes of alkaline phosphatase, 2120.
- Fisons Fertilizers Ltd.** Method and apparatus for determining free sulphate ions in wet-process phosphoric acid slurries, 3265.
- Fitak, B., and Rajpert, A.** Iodimetric determination of tin. I. Evaluation of the Polish standard method for the determination in food, 368.
- Fitzgerald, J. M., Lukasiewicz, R. J., and Drew, H. D.** Precipitation under homogeneous or heterogeneous conditions by photochemical action, 1107.
- Fiussello, N.** Possible errors in the determination of deoxy-derivatives by reaction with cysteine and sulphuric acid, 2663.
- Flament, I., Willhalm, B., and Stoll, M.** Researches on aromas. XVI (3). The aroma of cacao, 1564.
- Flaschka, H., and Garrett, J.** Use of a photo-voltaic receptor in a photo-titrator, 1619.  
— and **Mann, J.** Study of the quality of murexide end-points, 164.  
— and **Weiss, R.** Titrimetry with solid titrants, 2243.
- Flek, J.** See **Šedivec, V.**, 3305.
- Fleming, A. J.** See **Tetlow, J. A.**, 2236.
- Fletcher, K. S., III.** See **Curran, D. J.**, 2316.
- Flóra, T., and Almásy, A.** Thermal analysis of organic systems occurring during manufacture of the fungicides captan and falpet. I. Thermal analysis of mixtures of maleic and tetrahydrophthalic anhydrides, 728.
- Florean, E.** See **Crăciuneanu, R.**, 2478, and **Popper, E.**, 108.
- Florence, T. M.** See **Zittel, H. E.**, 1862.
- Florida, A., and D'Alessio, G.** Chromatographic behaviour of seminal ribonuclease, 2115.
- Floyd, K. M.** Determination of sorbic acid in orange juice, 384.
- Flynn, D. S., Kilburn, D. G., Lilly, M. D., and Webb, F. C.** Modifications to the Mackereth oxygen electrode, 2843.
- Flynn, G. W.** See **Volpicelli, R. J.**, 2242.
- Foa, E., Königsbuch, M., Lask, S., Schächter, O., and Stuhl, Z.** Apparatus for the study of reactions in stationary droplets by radioactive tracers, 508.
- Fok, P. P.** See **Baginski, E. S.**, 913.
- Fodiman, Z. I., and Levin, É. S.** Co-determination of nitro-compounds by d.c. differential polarography: determination of the more highly nitrated compound in nitration products, 1961. Use of non-protogenic and mixed solvents for polarographic determination of anthraquinone derivatives, 2543.
- Fogg, A. G.** See **Burns, D. T.**, 3079.
- Foissac, L.** Automated liquid chromatography applied to research and control in the food industry, 2169.
- Fomenko, L. D.** See **Okun', A. E.**, 2920.
- Fonseca Moraes, E. de C.** See **Moraes, E. de C. F.**
- Fontani Lamma, F.** See **Giuffrè, L.**, 1831.
- Fooks, J. R., McGilveray, I. J., and Strickland, R. D.** Colorimetric assay and identification of vancomycin hydrochloride, 2689.
- Forbes, St. J.** See **Clements, J. A.**, 1511.
- Ford, W. J.** See **Rudolph, G. G.**, 802.
- Forman, D. T., and Changus, G. C.** Automatic osmometer, 2252.
- Forman, M. L.** See **Sakai, H.**, 2284.
- Forrest, I. S.** See **Bolt, A. G.**, 815.
- Forrey, R. R.** See **Mon, T. R.**, 442.
- Forss, D. A., and Holloway, G. L.** Recovery of volatile compounds from butter fat, 376.  
— **Jacobsen, V. M., and Ramshaw, E. H.** Concentration of volatile compounds from dilute aqueous solutions, 944.
- Fossel, E. T.** See **Unimed Incorporated**, 2652.
- Foster, G. E.** See **Deavin, J. C.**, 1523.
- Foth, G.** See **Bennewitz, R.**, 2578.
- Fouassin, A.** See **Grosjean, M. H.**, 2185.
- Fouché, P.** See **Bisset, N. G.**, 1096.
- Foulatier, R., and Fraissard, J.** Cell for the study of adsorption by i.r. spectrophotometry, 478.
- Fowler, J. L., and Coleman, C. H.** Determination of moisture in freeze-dehydrated cottage cheese, 1546.
- Fowles, I. A., and Welti, D.** Collection of fractions separated by GLC. II. Direct transfer of the fraction from the trap to a silver chloride i.r. cell or a NMR spherical micro-cell, 448.
- Fox, J. C.** See **Katchman, B. J.**, 332.
- Fragstein, P. von.** See **Steinhauser, O.**, 686.
- Fraissard, J.** See **Foulatier, R.**, 478.
- Franc, J., and Hajkova, M.** Paper-chromatographic and electrophoretic determination of some aromatic carboxylic and sulphonic acids, 2.  
— and **Pour, J.** Identification, by continuous elementary analysis, of substances separated by gas chromatography, 1899.
- Franceschetto, M.** See **Rosa-Brusin, M.**, 1646.
- Frank, Yu. A.** See **Berman, A. D.**, 3311.
- Frank, K.** See **Wolf, F.**, 214.
- Franklin, M. J.** See **Stern, J. S.**, 856.
- Franklin, N. F.** See **Franklin, T. C.**, 1871.
- Franklin, T. C., and Franklin, N. F.** Storage of iron samples for hydrogen analysis, 1871.
- Franks, A., and Lindsey, K.** Dispersion of 1-Å X-rays with NPL X-ray gratings, 2814.
- Franks, M. C.** See **Wilson, J. N.**, 1585.
- Frant, M. S., and Shatkay, A.** Ion-specific membranes as electrodes in the determination of activity of calcium, 2371.
- Fraschetti, F.** See **Di Simone, L.**, 1096.
- Fratkin, Z. G.** See **Polivanova, N. G.**, 2970.
- Frêche, A.** See **Muzzarelli, R. A. A.**, 1154.
- Freger, S. V.** See **Babko, A. K.**, 28.
- Frei, R. W., Liiva, R., and Ryan, D. E.** Reflectance-spectrophotometric determination of cobalt, nickel and copper with picolinaldehyde 2-quinolylhydrazones, 2341.

- Frei, E. W., Nomura, N. S., and Frodyma, M. M. Comparison of techniques for detection and determination of triazine herbicides separated by TLC. I. Methods of detection, 994.
- Freiberger, I. A. See London, M., 857.
- Freier, E. F., and Hansen, K. L. Automated serum cholesterol determination, 2050.
- Freimuth, U., Zawta, B., and Büchner, M. TLC separation of structural isomers of free bile acids, 312.
- Freiser, H. See Chou, F.-C., 1788.
- Fremeaux, —, and Cattin, G. Automated dibenzoylmethane colorimetric determination of uranium, 2406.
- Fremlin, J. H. See Watson, J. E., 1404.
- French, R. L. D. Separate collection of krypton and xenon from reactor-coolant gas in preparation for gamma-spectrometric counting, 1129.
- French, T. M. Assay of atropine sulphate injection, 2132.
- French, W. N., Matsui, F., Cook, D., and Levi, L. Pharmacopoeial standards and specifications for bulk drugs and solid oral dosage forms, 2125.
- See also Beckstead, H. D., 1053, and Kaistha, K. K., 3234.
- Freney, J. R., and Wetselaar, R. Determination of mineral nitrogen in soil with particular reference to nitrate, 2737.
- Frère, J.-M., and Verly, W. G. Use of an acetylated derivative of 3-O-methylnoradrenaline for GLC, 316.
- Fresenius, W., and Stahl, E.; Stahl. Presentation of chromatographic results, 2780.
- Frey, H.-P. See Ackermann, G., 2, 431, 1113.
- Frey, S. A. See Scaringelli, F. P., 1595.
- Freyer, H. D. See Behne, D., 2279.
- Freyss, L., Bieth, R., and Mandel, P. Determination of polyphosphoinositides, 310.
- Frič, I., and Nováček, V. Photo-electric spectropolarimeter, 1632.
- Friedel, P. See Bondarovich, H. A., 963.
- Frieden, E. See Stratton, L. P., 2096.
- Friedman, H. S. Determination of total lipids in serum, 2625.
- Friedner, S., and Moberg, S. Determination of total faecal lipids including medium-chain triglycerides, 2044.
- Friedrich, K., Barthel, J., and Kunze, J. Effect of surface gases on the analytically determined gas content of molybdenum and tungsten single crystals, 2449.
- Friese, R. See Rutloff, H., 2121.
- Frishberg, A. A. Spectrographic determination of arsenic in molybdenum trioxide, 3004.
- Fritz, J. S., and Dahmer, L. D. Column-chromatographic separation of niobium, tantalum, molybdenum and tungsten, 1758.
- and Wood, G. E. Determination of olefinic unsaturation by bromination, 1907.
- Frodyma, M. M. See Frei, R. W., 994.
- Frohberg, M. G., Richter, K. E., and Bradatsch, R. Determination of chromium<sup>III</sup> in the presence of chromium<sup>III</sup> in iron-free slags, 648.
- Frolov, I. F. See Devyat'kh, G. G., 613.
- Frontinskii, A. A. See Shaposhnikov, Yu. K., 1377.
- Fruchard, C., Poma, J., and Bure, J. Study of the differentiation between hard and soft wheats, 984.
- Frye, H. See Trujillo, A., 168.
- Fuentes, F. J. V. See Valle Fuentes, F. J.
- Führer, G., Fechner, G., and Ackermann, H. Determination of trichlorophen in milk, 1559.
- Fuhrman, D. L., and Latimer, G. W., jun. Determination of chromium<sup>III</sup> and iron in chromium trioxide, 649.
- Fujii, I., and Muto, H. Direct read-out system for fast-neutron-activation analysis for oxygen in steel, 671.
- Fujimura, K. See Funasaka, W., 1322.
- Fujinaga, T., Kosuke, I., and Sawamoto, H. Theoretical consideration of tensammetric titration curves, 1115.
- Fujino, N. See Shiraiwa, T., 165.
- Fujishima, I. See Takeuchi, T., 1227.
- Fujiwara, S., Haraguchi, H., and Umezawa, Y. Effect of a static magnetic field on polarography, 2318.
- Fukamauchi, H., and Ideno, R. Spectrophotometric determination of organic compounds by the standard-addition method. I. Determination of organic iodine by spectrophotometry with copper<sup>II</sup>, 201.
- and Matsubara, C. Analysis with fluorotitanate-hydrogen peroxide reagent. XII. Determination of boron and silicon in admixture, 193.
- Fukasawa, T. See Uchikawa, H., 1734.
- Fukuda, K. See Kuroda, K., 940, 2699.
- Fukuda, Y. See Hosoyama, Y., 911.
- Fukushii, N. Quantitative analysis by use of an exchange reaction of metal chelates. I. Study of rate constants by spectrophotometric measurement, 18.
- Fukushima, H. See Nakajima, T., 1734.
- Fukutaka, K. See Imura, S., 1609.
- Fuller, W. H. See Hardcastle, J. E., 2736.
- Fuller, S. D. See Bertoglio Riolo, C., 655.
- Funahashi, Saburo. See Katayama, M., 3160.
- Funahashi, Shigenobu. See Tanaka, Motoharu, 1127.
- Funasaka, W., Fujimura, K., and Hanai, T. Separation of sugar phosphates on a cellulose ion-exchanger, 1322.
- Furedi, H., and Walton, A. G. Transmission and attenuated total reflection i.r. spectra of bone and collagen, 2539.
- Furley, R. J. See Dean, R. H., 2308.
- Furr, A. K., Robinson, E. L., and Robins, C. H. Spectrum-stripping technique for qualitative activation analysis using mono-energetic gamma spectra, 3361.
- Fursova, E. G. See Terent'ev, A. P., 203.
- Furutani, S. See Osajima, Y., 1536.
- Fuwa, K. See Iida, C., 285.

G

- Gabay, G. J. J., Santo, J. del, and Sax, N. I. Device for rapid dispensing of solid reagents, 423.
- Gabay, S., and George, H. Radioactive assay for aminotransferase, 340.
- Gabella, G., and Costa, M. Apparatus for freeze-drying of tissue, 2234.
- Gabler, R. C., jun., and Peterson, M. J. Spectrochemical analyses of high-purity zinc, 2375.
- Gabov, N. I. Paper chromatography of chlorinated methyl-phosphinic and -phosphonic acids, 234.
- Gabovich, A. M. Oscillographic determination of germanium, selenium and zinc in semiconductor materials, 2868.
- Gabrieli, E. R. See Sinha, S. N., 2616.
- Gabrieli, L. F. See Favretto Gabrielli, L.
- Gabriellson, A.-B. See Beronius, P., 3011.
- Gaddy, R. H., and Dorsett, R. S. Determination of free hydrochloric or nitric acid by automated ion exchange and colorimetry, 2457.
- Gadyuchkina, A. T. See Vakrushev, Yu. A., 1939.
- Gaglia, C. A., jun. See Chafetz, L., 2149.

- Gagliardi, E., and Wolf, E.** Determination of boron in fertilisers, soil, plants and spa water by using Nile blue A, 2210.
- Gaidakyan, D. S., and Aturyan, M. M.** TLC of less-common elements. II. Separation and identification of rhenium<sup>VII</sup>, molybdenum<sup>VI</sup>, vanadium<sup>V</sup> and tungsten<sup>VI</sup> in hydrochloric acid-alcohol media, 555.
- Gaidano, G., Molino, G., Angeli, A., Perotti, L., and Boecuzzi, G.** Applicability of GLC to the analysis of steroids of the hydrocortisone and corticosterone series, 2637.
- Gaillard, J. C.** See **Mestres, R.**, 1561.
- Gaist, L.** See **Menaché, R.**, 2114.
- Gaivoronskaya, I. Ya., and Nikitin, E. K.** Determination of concentration of aqueous 2-furaldehyde solution by titration with water in the presence of isobutyl alcohol as turbidity indicator, 253.
- Gajek, O., and Klimecak, H.** Dry ashing of samples in determination of tin in foods, 2706.
- Gajewski, S., Glowacki, J., and Cygowska, I.** Polarographic determination of zincb, 3270.
- Gakh, I. G.** See **Karpov, O. N.**, 241.
- Gal, J., Stedronsky, E. R., and Miller, S. I.** Acidic de-nitrosation and iodimetric determination of N-nitroso-compounds, 1912.
- Gale, H. J.** See **Gibson, J. A. B.**, 3349.
- Galen, G. W. van.** See **Mutter, M.**, 3099.
- Gales, M. E., jun., Kaylor, W. H., and Longbottom, J. E.** Determination of sulphate by automated colorimetry, 2757.
- Gallagher, T. F.** See **Fishman, J.**, 2052.
- Gallai, Z. A., and Rubinskaya, T. Ya.** Amperometric determination of rhenum. III. Titration of rhenum<sup>VII</sup> with iron<sup>II</sup> solution, 3014.
- Gallego-Andreu, R., Burriel-Martí, F., and Cobo, A.** Use of yellow molybdenum-thiocyanate complexes for the determination of reducing agents, 535.
- Gallegos, E. J., Green, J. W., Lindeman, L. P., LeTourneau, R. L., and Teeter, R. M.** Petroleum group-type analysis by high-resolution mass spectrometry, 1357.
- Gallielli, J. F.** See **Gressel, P. D.**, 2702.
- Gallet, J.-P., and Páris, R. A.** Thermometric study of the formation of complexes of iron<sup>III</sup>, aluminium and gallium. I. Oxalates and malonates, 556.
- Gambarov, D. G.** See **Akhmedli, M. K.**, 2391.
- Ganansia, J.** See **Landault, C.**, 867.
- Ganapathy, R.** See **Clark, R. S.**, 189.
- Gandhi, M. H., and Desai, N.** Spectrophotometric determination of iron with 2',4'-dihydroxypropionophenone oxime, 143.
- Gandhi, S. B., Patel, P. R., and Misarwala, K. H.** Colorimetric estimation of potassium guaiaicol-sulphonate in pharmaceutical preparations, 3237.
- Gandini, S., and Hydén, H.** Application of disc electrophoresis to the study of brain proteins, 3176.
- Gandolfo, N.** See **Camoni, I.**, 2746.
- Gangloff, J., and Ebel, J. P.** Fractionation of ribonucleosides by chromatography on ion-exchange resins, 3183.
- Gangopadhyaya, N.** See **Verma, M. R.**, 730.
- Ganguli, N. C., and Majumder, G. C.** Petri-dish device for separating milk proteins by starch-gel electrophoresis, 1544.
- Ganopol'skii, V. I.** Spectrophotometric determination of terbium, 1177.
- Gapanhuk, E., and Henriques, O. B.** Separation of kinins by paper chromatography after paper electrophoresis, 3175.
- Garcia, E. E.** Determination of nitrite by using the reaction with *p*-nitroaniline and azulene, 99.
- Garcia, F. C.** See **Capitán García, F.**
- García-Ramos, L. A., and Montagut Buscás, M.** Differential thermal analysis. II. Instrumental factors that influence the results, 3363.
- Garn, P. D., and Anthony, G. D.** Repetitive gas-chromatographic analysis of thermal-decomposition products, 524.
- Garner, C. S., Gillespie, R. B., and Hughes, R. G.** Instrument for reproduction of curves with independent abscissa and ordinate expansion, 2810.
- Garrett, E. R., Blanch, J., and Seydel, J. K.** Spectrophotometric analyses for ribose and 2-deoxy-D-ribose alone and in mixtures, 1922.
- Garrett, J.** See **Flaschka, H.**, 1619.
- Garst, G. R.** See **McKinney, R. W.**, 2801.
- Gartzen, W.** See **Bendel, E.**, 1312.
- Garza, A. C., and Weissler, H. E.** Automated simultaneous multiple chemical analyses of worts and beers, 2198.
- Gaspárić, J.** Determination and publication of  $R_F$  values for large groups of compounds, 2.  
— See also **Kapišinská, V.**, 1386, and **Svobodová, D.**, 2533.
- Gasset, J.** Sulphur compounds of pressed rapeseed cake. I. Their origin and determination, 2213; II. Examination of methods of determination, 2213.
- Gaston, L. K., and Gunther, F. A.** Pyrolysis - GLC for determination of polybutene residues on navel oranges, 2723.
- Gatford, C.** See **Banthorpe, D. V.**, 1916.
- Gaur, J. N.** See **Jain, D. S.**, 1172, 2883.
- Gautschi, M.** See **Kesseling, P.**, 484.
- Gavriliuc, A.** See **Drăgușin, I.**, 260.
- Gawargious, Y. A.** See **Awad, W. I.**, 1908, and **Tobia, S. K.**, 567, 1117.
- Gawrych, Z., and Pomazańska, T.** Detection of decomposition products in diuretic drugs of the hydrochlorothiazide type, 3233.
- Gay, M. L.** See **Dejongh, D. C.**, 3186.
- Gederevich, N. A.** See **Shitikov, V. S.**, 1277.
- Gee, M.** Preparation of methyl esters of amino-acids for GLC with dimethyl dodecanedioate as an internal standard, 378.
- Geest, A. C. von der.** See **Pronk, H. F.**, 1617.
- Geetha, S., and Joseph, P. T.** Gravimetric estimation of zirconium by using 3-nitrophthalic acid, 2960.
- Gehrke, C. W., Kaiser, F. E., and Ussary, J. P.** Automated spectrophotometric determination of nitrogen in fertilisers, 2211.
- **Stalling, D. L., and Ruyle, C. D.** Quantitative GLC of trimethylsilyl derivatives of nucleic acid constituents, 2101.
- Geibatova, S. S.** See **Alekperov, R. A.**, 2399.
- Geiss, F.** Reproducibility in TLC: introduction, 2.  
— and **Sandroni, S.** Elution anomalies of solvent mixtures in TLC, 2.  
— and **Schlitt, H.** Effect of temperature in TLC, 2.  
— **Versino, B., and Schlitt, H.** Inorganic salts as stationary phases in gas chromatography, 3; 2796.
- Geissbuehler, H.** See **Baunok, I.**, 2743.
- Gelabert de Brovetto, A.** See **Delle Monache, F.**, 2131, and **Marini-Bettolo, G. B.**, 1.
- Gel'man, N. É.** Elementary analysis of organo-metallic compounds: simultaneous determination of carbon, hydrogen and other elements in one weighed sample, 1900.



- Gel'man, N. É. and Grigor'yan, V. P. Micro-determination of oxides in organic compounds containing sulphur content as a component for fixing the reaction tube during the direct determination of oxides 3655
- See also Cherkasskii, A. A., 4 Novozhilova, K. L. 1266 and Shadrin, T. M., 264
- Genest, J. See Nowaczynski, W., 845
- Gerikas, M. C. See Randerknecht, H., 2626 2674
- Gerini, A. K. See Levina, N. S., 422
- Gent, C. M. van. Separation and micro-determination of lipids by TLC followed by densitometry, 3
- George, F. C. K., and Thomas, V. Urinalysis by multiple strip testing, 1983
- George, H. See Gabay, E., 340
- George Kent Ltd. Polarised indicator-electrode for a continuous automatic titrimeter, 3343
- Georges, R. J., and Politzer, W. M. Comparison of colorimetric estimations of total neutral 17-oxosteroids in urine, 2060
- Gerardi, M. A. See Carunchio, V., 1270
- Gerber, H. E. Measurement of oil-droplet size distribution of an oil fog, 3376
- Gerding, J. J. T., and Hagel, P. Continuous flow-meter for automated quantitative liquid chromatography, 1039
- Gerlach, H. TLC of nitrogen-containing bases. III. Separation of therapeutically important phenothiazine derivatives, 934
- Gerlach, H. O. See Halász, I., 2775, 2776
- German, A. See Vancea, M., 2527
- Gershbein, I. L. See Singh, E. J., 387
- Gersons, H. See Diemecke, G., 2342
- Gerner, A., and Grünig, V. Contributions to the ring-oven method. I. Possible use for quantitative ultra-micro analysis, 1048; II. Complexometric ultra-micro determination of iron<sup>III</sup>, 661
- Gertsava, N. M. See Zanchenko, V. A., 1626
- Gertsava, N. S. See Veselago, L. I., 1445
- Gessa, G. L. See Spiano, P. F., 2067
- Gesser, H. D. See Czabry, J. J., 1945 Demchuk, N., 2671 and Levy, R. L., 2746 3041
- Gessner, P. K. See Capana, E. E., 262
- Get'man, T. E. See Babko, A. K., 1766
- Gez, M. E. See Berco, M., 2745
- Ginghione, M. See Iacova, D., 3044
- Giose, A. K., and Dey, A. K. Qualitative analysis of iron-containing catalysts by the ring-oven method, 1756 Quantitative analysis of residues of metal ions by the ring-oven method uranium-thorium-zirconium-titanium, and thorium-cerium-zirconium-titanium, 1755 Micro-determination of calcium, strontium and barium by using the ring-oven method, 2664
- Ghosh, Amita. See Ghosh, Amita, 2716
- Ghosh, Amita, Ghosh, Amita, and Dutta, J. Separation and analysis of component fatty acids of some commercial butters by GLC, 2716
- Ghosh, N. K. See Fishman, W. H., 2120
- Ghosh, N. N., and Bhattacharyya, A. Studies of  $\alpha$ -substituted salicylaldehyde and its metal-complexing agent. II. Transition complexes 623
- Ghosh, P., and Barik, J. M. Gravimetric determination of guanidine by dipicrylamine, 2266
- Ghosh, P. C. See Tewari, S. G., 2346
- Ghosh, S. K. See Mitra, G. D., 1945
- Giancristo, M. A. See Bondarovich, H. A., 963
- Gibalo, I. M., Al'badri, D. E., and Eremina, G. V. Extraction of proteins and vitamins from biological and medical and organic systems, 161
- Gibbs, D. F. Effect of blood on the assay for phosphoglucomate dehydrogenase dehydrogenating in vaginal fluid, 2666
- Gibbs, E. See Jones, I. D., 2726
- Gibson, F. H. See Abernethy, R. F., 661
- Gibson, J. A. B., and Gair, E. J. Absolute standardisation with liquid-ventilation columns. IIa
- Gibson, J. H. See Rumball, J. H., 465
- Giddings, I. E., jun. See Ditzel, E. F., 1658
- Gieger, U. See Thaler, H., 1963
- Giezwizka, E., and Kieczyńska, M. Determination of trace impurities in catalysts. I. Determination of copper, silver and gold, 1661
- Kieczyńska, M., and Litaszewicz-Busz, A. Determination of cerium in highly-alloyed cast iron, 1670
- Gigg, A. R. See Gilling, G. W., 1644
- Gilbert, E. N. See Wright, F. C., 1646
- Gilbert, E. N. See Argyrion, P. I., 1268 2681
- Gilbert, M. See Berford, E., 1664
- Gilbert, S. G. See Wilder, R. A., jun., 2460
- Gill, T. J., III. See Kana, E. W., 1666
- Gillespie, R. B. See Garner, C. E., 2660
- Gilsh, A. C., jun. Determination of traces of lead by co-crystallization with sodium chloride and spectrophotometry, 2667
- Gills, L. See Gronimelnyuk, F., 3674
- Gilot, B. See Aubry, M., 1642
- Girard, L., and Bariness, A. C. Analysis of the effluent from a reactor, 451
- Girard, F. See Bigliocco, C., 512
- Girault, J. See Destemalle, G., 2232
- Girling, G. W., Gigg, A. R., and Heley, M. R. Errors in peak areas due to irregular traces of recorder charts, 1644
- Gisfrat, L., Losic, E., and Fontan Lanna, F. Semi-micro volumetric determination of nitrate in the presence of nitrite, 1631
- Gisfrat, L. See Boswick, D. C., 2216
- Gizak, E., and Walczyk, W. Semi-quantitative determination of  $\alpha$ -oxy- $\beta$ -hydroxyketones in di- $\beta$ -butyryl peroxypentanoate and in 1,3-bis- $\alpha$ -oxy-pentanoate and study of decay processes of the latter peroxide type, 714
- Glazer, E. See Guilhard, G. S., 1667
- Gleim, A. L. See Agwa, I. T., 1661
- Glor, D. See Diamant, E., 324
- Glockner, G. As a gas column for precipitation chromatography, 324
- Głowacki, J. See Gajewski, S., 2774
- Gnec, N. See Pfeifer, M., 262
- Gruhnovskaya, R. D. See Leipunsk, Ya. I., 1441
- Grunz, E. R. Analysis of iron. Use of the flame-spectrometric reaction for determination of copper, cobalt and nickel, 1224 1226
- Gruzek, G., and Treutler, E. Kinetic behavior of nitrogen and nitrogen in 1956 on molecular sieves, 1636
- Grupe, M. K. See Loren, E. C., jun., 3066
- Gruze, S. See Litvack, C., 1667
- Gučević, M. K. See Khristova, V. P., 1261
- Gučikova, I. I. See Basanova, S. M., 1666
- Groß, H. Determination of carbon content of organic material steel from the residual amount of percent of ferrite, 1671
- Groß, D. P., Trickett, K. C., and Singh, R. P. Separation and determination of gallium and indium, 173
- Gugi, H. van, and Langejan, M. Limit test in potassium according to the Schlenker-Planchet couple, 1668
- Gulay, M. J. E. Highest equivalent to a theoretical peak of an operational column lined with porous layer a gradient separator, 2704
- Gulandari, V. I. Gamma-ray-resonance spectroscopy, 623
- Golden, H. J. See Levine, I. L., 561

- Goldfinger, S. See **Klinenberg, J. R.**, 336.
- Goldman, J., and **Goodall, E. E.** Quantitative analysis on thin-layer chromatograms: theory for light-absorption methods with an experimental verification, 2261.
- Goldman, J. A.** Redox equilibria. IV. Titration curve equations for homogeneous and symmetrical redox reactions, 2321.
- Goldstein, D.** Spot test for detection of iodine in organic compounds, 200.
- Goldstein, D. A.** See **Sherma, J.**, 1771.
- Goldsztejn, M.** See **Coulomb, R.**, 2397.
- Goldwasser, A.** See **Iacocca, D.**, 3019.
- Goles, G. G., Greenland, L. P., and Jeromé, D. Y.** Determination of chlorine, bromine and iodine in meteorites, 188.
- Golike, R. C., and Siczka, P. M.** Heating system for NMR spectrometer, 2828.
- Golis, E.** See **Soják, L.**, 764.
- Golombek, A.** See **Kirowa-Eisner, E.**, 2320.
- Golovnya, R. V., Mironov, G. A., and Zhuravleva, I. L.** Gas-chromatographic analysis of isomeric amines and heterocyclic nitrogen compounds, 229. Gas-chromatographic analysis for amines in volatile components of salmon caviar, 1541.
- and **Uralets, V. P.** Gas-chromatographic analysis of complex mixtures of monocarbonyl compounds. I. Alkanals, alkan-2-ones and alk-2-enals, 1325.
- Gol'tsberg, I. M.** See **Tolmachev, V. N.**, 1199.
- Goltutina, M. M., Kuznetsov, A. A., Novikova, N. Ya., and Nikolaev, Yu. M.** Determination of strontium in human bone tissue, 1403.
- Gómez Coedo, A., and Jiménez Seco, J. L.** Determination of iron, manganese, calcium, magnesium, aluminium and silicon in iron ores by atomic-absorption spectrophotometry, 2487.
- Goncharova, N. A.** See **Evstratova, K. I.**, 2522.
- González, M. E. C.** See **Coladas González, M. E.**
- González V., F.** See **Morales B., A.**, 109.
- Good, J. J.** See **Skipski, V. P.**, 2042.
- Goodall, J. A. B.** See **Cunningham, J. G.**, 26.
- Goodall, R. E.** See **Goldman, J.**, 2261.
- Gooding, B. W. J.** See **Young, W. A. P.**, 2849.
- Goodman, M. M.** See **Loev, B.**, 1625.
- Goodwin, J. F.** Micro-estimation of fibrinogen with a semi-micro modification applicable to icteric plasma, 884. Evaluation of turbidimetric techniques for estimation of plasma fibrinogen, 2088.
- Goolsby, A. D., and Sawyer, D. T.** Electrochemical reduction of superoxide ion and oxidation of hydroxide ion in dimethyl sulfoxide, 1843.
- Gorbenko, F. P., and Lapitskaya, E. V.** Complexometric determination of calcium with various metallochromic indicators, 2367.
- Görbicz, L.** See **Upor, E.**, 1181.
- Gordeeva, A. N.** See **Zakhariya, N. F.**, 2413.
- Gordeeva, M. N., and Ryndina, A. M.** Spectrophotometric study of the reaction of gallium ions with sulphonazo, 2386.
- Gordon, A. H., and Louis, L. N.** Preparative acrylamide electrophoresis: a single gel system, 1077.
- Gordon, B. E., Shebs, W. T., and Bonnar, R. U.** Determination of doubly labelled artificial soiling in detergency studies, 1381.
- Gordon, C. F., Schuckert, R. J., and Bornak, W. E.** Determination of ethylenedisithiocarbamate residues in plants, fruits and vegetables, 408.
- Gordon, H.** See **Norwitz, G.**, 1401.
- Gordon, M. J.** See **Griffith, O. M.**, 1032.
- Gordon, M. S.** See **Loveridge, B. A.**, 1608.
- Gordus, A. A.** Determination of the true mid-point of a count rate in radionuclear counting, 613.
- Gorevaya, A. E.** See **Nikitina, O. I.**, 2467.
- Gorman, R. W.** See **Kawahara, F. K.**, 2233.
- Górniak, H.** See **Weyers, J.**, 3240.
- Gorodentseva, T. B.** See **Polyak, E. A.**, 1214.
- Görög, S.** Analysis of steroids. VII. Application of sodium tetrahydroborate in spectrophotometric investigation of conjugated oxosteroids, 3154.
- Gorovits, T. T.** See **Vdovtsova, E. A.**, 1346.
- Goryushina, V. G.** See **Solodovnik, S. M.**, 1838.
- Goseki, S.** See **Keiji, K.**, 1164.
- Goszczyńska, H., and Kowalczyk, M.** Spectrophotometric determination of trace amounts of arsenic in high-purity lead, 620.
- Gothard, F. A.** See **Bratu, E. A.**, 1028.
- Gotô, H., Atsuya, I., and Shoji, T.** Concurrent determination of magnesium and calcium in iron ores by atomic-absorption spectrophotometry, 3021.
- See also **Hirokawa, K.**, 3024.
- Goto, K.** See **Takao, Y.**, 1013, 1794.
- Gotô, S.** [Annual Review, 1967]—Pesticides, 1734.
- See also **Suzuki, K.**, 992.
- Gotoh, K.** See **Nakajima, Y.**, 527.
- Gottschalk, G.** Electronic computing in analytical chemistry. IV, 1735.
- Gottstein, O.** See **Dubanský, A.**, 2345.
- Goudie, A. J.** See **Spitz, H. D.**, 1960.
- Gould, J. H.** See **Chen, J.-Y. T.**, 2826.
- Goulden, J. D. S., and Manning, D. J.** Quantitative analysis of water-soluble fertilisers by aqueous-solution i.r. spectroscopy, 400.
- Gouverneur, P., Snoek, O. I., and Heeringa-Kommer, M.** Nitrogen determination in mineral oils by means of oxy-hydrogen combustion, 1364.
- See also **Snoek, O. I.**, 1187.
- Gouw, T. H., and Jentoft, R. E.** Separation efficiencies of normal freezing, column crystallisation and zone melting, 1031.
- Govindaraju, K.** Ion-exchange dissolution method for silicate analysis, 1820.
- Gowda, H. S., Shakunthala, R., and Ramappa, P. G.** Use of promethazine hydrochloride as redox indicator in vanadimetry, 2853.
- Goworek, W.** See **Wronski, M.**, 3172.
- Goya, S.** See **Nambara, T.**, 842, 1443.
- Goyal, S. S., and Tandon, J. P.** Studies on vanadium<sup>IV</sup> complexes of 7-aryazo-8-hydroxyquinoline-5-sulphonic acid dyes, 1841. Micro-determination of molybdenum<sup>VI</sup> with Phenylazoxine S dye, 3000.
- Gozhenko, N. A.** See **Rud'ko, B. F.**, 1130.
- Graham, R. J. T.** Studies on the TLC of some indanols, 2. TLC separation of nitrophenols on polyamide surfaces, 2.
- **Bark, L. S., and Daly, Jeremiah.** Studies in the relationship between molecular structure and chromatographic behaviour. XV. Behaviour of methylated phenols on thin layers of cellulose impregnated with formamide and with *N*-methylated formamides, 2.
- Gramain, P., and Rascio, V.** Studies of under-water paints: analysis of paint media by i.r. spectroscopy, 1391.
- Granger, C.** See **Falgoux, D.**, 3.
- Grant, D. W.** Preparation and properties of a new type of porous-layer open-tubular column, 3, 2267.
- Grassetti, D. R., and Murray, J. F., jun.** Determination of mercapto-groups with di-2-pyridyl or di-4-pyridyl disulphide, 706. Use of di-2-pyridyl disulphide in the determination of glutathione and of NADP by enzymic cycling, 1458.



- Grasshoff, K.** Sensitive and direct method for the automated and manual determination of ammonia in sea-water, 2764.
- Graul, E. H.** See **Schaumlöffel, E.**, 1046.
- Gravatt, A. S.** See **Skogerboe, R. K.**, 288.
- Gray, A.** See **Ball, M. C.**, 3023.
- Grđinić, V.** See **Gertner, A.**, 661, 1048.
- Grechanovskii, V. P.** See **Zakhariya, N. F.**, 2413.
- Green, A.** Colorimetric determination of methyl-malonate acid in urine, 2617.
- Green, H.** Determination of cerium in cast iron, steel and iron - silicon - magnesium alloys, 667.
- Green, J. W.** See **Gallegos, E. J.**, 1357.
- Green, T. E.** Extraction of 8-hydroxyquinoline complexes of trace elements from tungsten solutions, 2450.
- Greene, R. S.** See **Downing, D. T.**, 1928.
- Greenfield, E. L.** See **Malanowski, A. J.**, 2175.
- Greenland, L. P.** See **Goles, G. G.**, 188.
- Gregorowicz, Z., Jalowicki, H., and Buhl, F.** Gravimetric determination of mercury<sup>I</sup> with potassium hydrogen phthalate, 1156.
- See also **Czerniec, J.**, 3284, and **Kulicka, J.**, 3100.
- Greifeneder, J. G., and Browne, K. W.** Determination of vegetable tannin in liquors by u.v. absorption, 276.
- Greiner, N. R.** Gas-chromatographic analysis of hydrogen peroxide solutions, 1131.
- Gressel, J., and Wolowelsky, J.** A 'macroteme' for polyacrylamide gel and tissue slicing, 2807.
- Gressel, P. D., and Gallelli, J. F.** Quantitative analysis and alkaline stability studies of allo-purinol, 2702.
- Griboff, S.** See **Pfeffer, M.**, 2020.
- Grieco, M.** See **Carnicelli, A.**, 2055.
- Griffith, O. M., Gordon, M. J., and Patterson, J.** Micule spheres used as density markers for gradient column centrifugation, 1032.
- See also **Jolley, W. B.**, 1622.
- Griffiths, T. R., Lee, F., and Wijayanayake, R. H.** Optical cell for measuring the spectra of small amounts of volatile solutions under pressure at temperatures up to 300°, 475.
- Grigorescu, I.** See **Belu, R.**, 412.
- Grigor'eva, L. V.** See **Shefter, V. E.**, 3306.
- Grigoriu, D., and Bogdan, M.** Evaluation of solvents in the separation of alkylbenzene hydrocarbons from alkylnaphthalene hydrocarbons, 742.
- Grigoryan, V. G.** Simple potentiometric determination of serum hydrolases, 2116.
- Grigor'yan, V. P.** See **Gel'man, N. E.**, 3053.
- Grimm, H.** See **Kuhnert-Brandstätter, M.**, 2139.
- Grimm, W.** Glow-discharge lamp for routine spectral analytical measurements, 1080.
- Grinzaid, E. L.** See **Denisov, E. I.**, 631, and **Nadezhkina, L. S.**, 2978.
- Grisaru, R., and Constantinescu, A.** Determination of protein in milk by the dye-binding method, 3245.
- Grob, R. L., and McCrea, G. L.** Investigation of organic phosphorus compounds by GLC, 737.
- **Weinert, G. W., and Drellich, J. W.** Evaluation of alkali-metal chlorides and nitrates as column packings in GSC, 1063.
- Grochowski, R.** See **Cichowski, Z.**, 2563.
- Groen, A.** See **Kwartz, E. W.**, 3156.
- Gromova, V. G.** See **Chelnokova, M. N.**, 3068.
- Gros, C.** Micro-analysis of amino-acids and peptides: reactivity with 5-dimethylaminonaphthalene-1-sulphonyl chloride and separation of the derivatives formed, 868.
- Grosjean, M. H., and Fouassin, A.** Determination of propionic acid in foods by GLC, 2185.
- See also **Noirfalise, A.**, 1096.
- Gross, D.** Fractionation and characterisation of sugar colour by modern separation methods, 2171.
- Gross, D. E., and Tinker, H. B.** Quantitative GLC determination of free adipic acid, 1930.
- Gross, F. C.** Determination of water and volatile alcohols in cosmetics by programmed-temperature gas chromatography on porous polymer beads, 1373.
- and **Jones, J. H.** Determination of propane-1,2-diol in cosmetics by gas chromatography, 1374. Determination of glycerol in cosmetics by GLC. I. Development of the method, 1375; II. Collaborative study, 1375.
- Gross, P., Monnier, D., and Haerdi, W.** Separation of traces of lead<sup>II</sup> by redox exchange with mercury, 1095.
- See also **Monnier, D.**, 3.
- Grossbach, U., and Weinstein, I. B.** Separation of RNA by polyacrylamide gel electrophoresis, 2659.
- Grosse-Ruyken, H.** See **Grossmann, O.**, 1222.
- Grosskreutz, W., Schultze, D., and Wilke, K.-T.** Complexometric determination of yttrium and aluminium in yttrium - aluminium garnet crystals, 597.
- Grössl, V. G.** See **Busev, A. I.**, 1884.
- Grossmann, A., and Schirmer, W.** Adsorption of propane - propene mixtures on molecular sieves, 2604.
- Grossmann, O., and Grosse-Ruyken, H.** Spectrophotometric determination of nickel, cobalt, copper, iron and zinc in niobium, 1222.
- Groteleschen, R. D., and Smith, D.** Determination and identification of non-structural carbohydrates removed from grass and legume tissue by sulphuric acid, Taka-diastase and water, 988.
- Groth, A. B.** Preparation of halide discs for i.r. micro-analysis, 481.
- Groulade, J., Chicault, M., and Waltzinger, W.** Automated absorptiometry of very dilute protein solutions after column chromatography, 1461.
- Groves, W. E., Davis, F. C., jun., and Sells, B. H.** Spectrophotometric determination of microgram amounts of protein without nucleic acid interference, 2651.
- Gruber, M. P., and Klein, R. W.** Determination of benzoyl peroxide stability in pharmaceuticals, 943.
- Gruca, M., Janko, Z., Kanty, J., and Kotarski, A.** Analysis of pyridazinone derivatives by TLC and polarography, 995.
- Gruen, D. M., Newman, D. S., and McBeth, R. L.** Null-pressure optical cell for measurements on liquids at elevated temperatures and pressures, 2827.
- Grunberger, C.** Use of a computer for processing gas-chromatographic analyses, 3.
- Grunder, F. I., and Boettner, E. A.** Water analysis by atomic-absorption and flame-emission spectrophotometry, 2226.
- Grüne, A.** Errors in paper chromatography: reproducibility of  $R_F$  values, 2. Ready-made thin-layer plates for TLC, 2781.
- and **Nobbe, V.** Permitted food preservatives and their identification by TLC on ready-made silica gel plates, 1552.
- Grünwald-Fischer, A., and Végh, A.** Paper-chromatographic examination of a mixture of penta- and hexa-methylpararosaniline chlorides and of hexamethylpararosaniline chloride, 2163.



- Gruzin, P. L., and Babikova, Yu. F. Application of radio-isotopic and nuclear-physics methods and apparatus in metallurgy: review, 4.
- Grzegorzka, E., and Rózycki, C. Colorimetric determination, with Eriochrome cyanine R, of small amounts of aluminium in the oxides of iron, manganese, nickel, magnesium and lithium, 590.
- Grzelak, R. See Czakow, J., 3320.
- Guarnieri, M., and Barry, R. D. Simultaneous determination of pregnanediol and  $3\alpha$ -hydroxy- $5\beta$ -pregnan-20-one in urinary extracts by GLC, 2057.
- Guberska, J. See Czerwiński, W., 3081.
- Guénier, J. P. See Chovin, P., 2530.
- Guerrant, G. O., Hunter, J. D., and McBride, C. H. Ammonium citrate extraction for determination of available phosphorus, 1578.
- Guerrero, A. H. See Sivori, R., 1212.
- Guerrero, H. C. See Vandercreek, C. E., 2178.
- Guilbault, G. G. Use of mercury<sup>II</sup> bromide as coating in a piezoelectric crystal detector for gas chromatography, 1073.
- Brignac, P., jun., and Zimmer, M. 4-Hydroxy-3-methoxyphenylacetic acid as a fluorimetric substrate for oxidative enzymes: analytical application of the peroxidase, glucose oxidase and xanthine oxidase systems, 2113.
- and Heyn, A. N. J. Fluorimetric determination of cellulase, 1483.
- and McQueen, R. J. Ultra-sensitive catalytic method for metal ions and organic compounds containing cyano-groups, 2866.
- Sadar, S. H., Glazer, R., and Haynes, J. Umbelliferous phosphate as a substrate for acid and alkaline phosphatases, 3187.
- Guillemaut, A., and Mohadjer, K. Analysis of silicate rocks by X-ray spectrofluorimetry, 89.
- Guiochon, G. See Landault, C., 867.
- Guiraldeng, P., and Sabot, M. Effect of structure and surface condition on the X-ray fluorescence analysis of super-carburised 13% chromium steels, 1875.
- Gulson, B. L., and Lovering, J. F. Rock analysis using the electron probe, 2483.
- Gumprecht, D. L. Paper chromatography of some isomeric disubstituted phenols. I. Phenol containing one variable and one hydroxyl group as substituents, 744.
- Gunn, B. M. Incident attenuation factor in X-ray emission analysis: determination of heavy elements in standard rocks, 1084.
- Günther, F., and Burckhart, O. Determination of alkaline phosphatase in hens' egg yolk, 946.
- Günther, H., and Pfeiffer, W. Gas-chromatographic investigation of lemon oil, 3249.
- Gupta, C. M., and Gupta, J. K. Polarography of molybdenum in aspartic acid solution, 3001.
- See also Joshi, M. P., 2929.
- Gupta, D. See Shellard, E. J., 3205.
- Gupta, Derek. Separation and estimation of testosterone and  $17\alpha$ -hydroxyandrost-4-en-3-one in urine, 845.
- Gupta, G. C. See Malik, W. U., 1890.
- Gupta, G. N. Solid-state scintillation counting on glass micro-fibre medium in a plastic bag for tritium, carbon-14 and chlorine-36 in biological and organic materials, 1402.
- Gupta, J. K. See Gupta, C. M., 3001.
- Gupta, N. See Bhattacharyya, B. N., 2430.
- Gupta, R. D. See Bhat, A. N., 2933.
- Gupta, S. S., and Mukerjee, D. Use of benzoic acid as precipitant for metals, 35, 1748.
- Gureev, E. S., Islamov, T., Miranskii, I. A., Muminova, M. F., and Miroshnikov, V. S. Neutron-activation determination of rhenium, 1260.
- Gurevich, A. I., and Chukreeva, G. N. Standardisation of silicic acid in use in TLC, 1633.
- Gürkök, Z. See Güven, K. C., 1509.
- Gurny, O. See Fishman, J., 2052.
- Guroff, G., Rhoads, C. A., and Abramowitz, A. Simple radio-isotope assay for phenylalanine 4-hydroxylase co-factor, 906.
- Gürtler, O., and Doležal, J. Potentiometric determination of manganese, in a medium of alkaline mannitol, with potassium ferricyanide, 1257.
- Gusev, S. I., Kozhevnikova, I. A., Mal'tseva, L. S., and Shechurova, L. M. Pyridylazo-compounds as metallochromic indicators. IV. Interaction of 2-(2-pyridylazo)-*p*-cresol and 5-ethylamino-2-(2-pyridylazo)-*p*-cresol and its bromo-derivatives with lead<sup>II</sup>, 2416.
- and Kurepa, G. A. 5-Ethylamino-2-(2-pyridylazo)-*p*-cresol and its bromo-derivatives as indicators for the complexometric titration of thallium, 593.
- Poplevina, L. V., and Pesis, A. S. Extraction - photometric determination of antimony<sup>III</sup> with pyridylazo-compounds, 106.
- and Shalamova, G. G. Extraction - photometric determination of vanadium<sup>V</sup> with pyridylazo-compounds, 2984.
- and Vin'kova, V. A. Interaction of palladium with pyridylazo-compounds. III. Extraction - photometric determination of palladium with 4-(2-pyridylazo)-1-naphthol and its 3-bromo- and 3,5-dibromo-pyridyl analogues, 1887.
- Gustafson, P. F. See Brar, S. S., 518.
- Gut, J. See Jentsch, D., 3.
- Gutai, J. P. See Sharma, J., 1771.
- Gutbier, H., and Luy, H. Detection and determination of traces of higher-boiling impurities in sulphur hexafluoride, 121.
- Gutenmann, W. H., and Lisk, D. J. GSC, on porous polymer beads, of Nemagon fumigant in extracts of soil, 2749.
- Gutermakher, T. K. See Songina, O. A., 2360.
- Guth, J. A., and Manner, L. P. 4-(4-Nitrobenzyl)-pyridine as reagent for TLC determination of various heterocyclic nitrogen compounds, 406.
- Guthan, G. R. See Shull, K. E., 1010.
- Gutman, L. M. See Levina, N. S., 3120.
- Gutmann, H. See Vetter, W., 338.
- Guttmann, D. E. Detection and determination of reducing substances in ergocalciferol, 1576.
- Gutwasser, H. See Miloserdov, P. N., 258.
- Güven, K. C. Identification of synthetic tuberculo-static drugs by TLC, 1522. Identification of mercurial diuretic compounds by TLC, 2701.
- and Alpar, O. Identification of dehydroascorbic acid and ascorbic acid by TLC, 903.
- Gürkök, Z. Identification of pyridoxine hydrochloride by TLC, 1509.
- and Tekinalp, B. Identification of pyrazole derivatives by TLC, 3218.
- Guvernator, G. C., III. See Long, R. E., 270, and Simonaitis, R. A., 226.
- Guyer, M. See Sawicki, E., 755, 1596.
- Guyon, J. C. See Madison, B. L., 1179.

- Haase, H.** Separation and identification of synthetic resin plasticisers. I. Isolation of plasticisers and their separation and determination by GLC, 1977; II. TLC separation and i.r. spectrophotometric determination, 2581.
- Habgood, H. W.** See **Ball, D. L.**, 2278.
- Hackley, B. M., Smith, J. C., and Halsted, J. A.** Determination of zinc in plasma by atomic-absorption spectrophotometry, 1997.
- Hadesty, G. B.** See **Latta, R. E.**, 520.
- Hadjioannou, T. P., and Valkana, C. G.** Automated catalytic micro-determination of tungsten, 1859.
- Hadley, J., and Book, J. L.** Use of computers with laboratory chromatographs, 3313.
- Haefelfinger, P.** Determination of a quaternary alkaloid after isolation by TLC, 2.  
— See also **Studer, P.**, 2.
- Haenni, E. O.** See **Damico, J. N.**, 2023.
- Haerdi, W., Balsene, L., and Monnier, D.** Non-destructive determination of hafnium by neutron activation and  $\gamma$ -ray spectrometry: theoretical study and application to zirconium and various alloys, 2419.
- **Baumgartner, A., and Monnier, D.** Separation of traces of silver by redox exchange with mercury, 3.  
— See also **Buffe, J.**, 1868, **Daniel, R.**, 760, **Gross P.**, 1095, and **Monnier, D.**, 3.
- Haffty, J., and Riley, L. B.** Determination of palladium, platinum and rhodium in geological material by fire assay and emission spectrography, 1886.
- Haftka, F. J.** X-ray spectrometric analysis for transition elements in zeolites after wet digestion, 177.
- Hagel, P.** See **Gerding, J. J. T.**, 1039.
- Hagen, E.** TLC analysis of lubricants in rigid poly(vinyl chloride) moulding powders, 1970.
- Hagenfeldt, L.** Measurement of carbon dioxide, labelled with carbon-14, in blood, 804.
- Haggag, A.** See **Alian, A.**, 605.
- Hagino, K.** See **Komatsu, Sadakichi**, 1202.
- Hagiwara, K.** Determination of micro amounts of metal ions by square-wave polarography with chelate substitution reactions. V. Determination of chromium<sup>III</sup>, 1238.
- Hagman, H. E.** See **Tishler, F.**, 2725.
- Hahn, H. H.** See **Pretorius, V.**, 1044.
- Hahn, E. B., and Allam, S. I.** Determination of radio-iron with benzenesulphonic acid, 1264.
- Hahn, R. L.** Recoil technique and its possible use in activation analysis, 1709.  
— See also **Ricci, E.**, 1711.
- Haidar, M.** See **Brody, J. I.**, 1076.
- Haines, W. E.** See **Okuno, I.**, 1362.
- Haining, J. L., and Legan, J. S.** Fluorimetric assay for xanthine oxidase, 1482.
- Hais, I. M.** Factors that influence paper chromatographic  $R_F$  values, 2.
- Hajdu, P.** Fluorimetric determination of ethacridine lactate in bile, duodenal fluid and faeces, 1419.
- Hajkova, M.** See **Franc, J.**, 2.
- Haken, J. K.** Structure and retention-volume relationships in the gas chromatography of fatty acid methyl esters, 2264.
- Hakoila, E.** Polarographic currents in potassium peroxodisulphate-alkali halide systems: determination of peroxodisulphate ion, 1847.
- Hala, L., and Nemeth, I.** Separation of  $C_2$  to  $C_5$  hydrocarbons from air by automated chromatography, 2222.
- Halász, A.** See **Pungor, E.**, 91, 1195.
- Halász, I.** Optimal column type for gas-chromatographic analyses, 3.
- **Gerlach, H. O., Kroneisen, A., and Walkling, I.** Peak broadening inside and outside a liquid chromatographic column, 2776.
- **Kroneisen, A., Gerlach, H. O., and Walkling, I.** Problems of rapid liquid chromatography with high inlet pressures, 2775.
- Haldar, B. C.** See **Taiwar, U. B.**, 683.
- Hall, D. A., and Elving, P. J.** Purification of pyridine as solvent for voltammetric studies: effect of impurities, 1094.
- Hall, G.** See **Tetlow, J. A.**, 2236.
- Hall, J. L.** See **Fisher, J. F.**, 46.
- Hall, R. F.** See **Fisons Fertilizers Ltd.**, 3265.
- Hall, T.** Micro-probe analysis of biological specimens, 1097.
- Haller, A.** Detection of denaturants in alcoholic pharmaceutical preparations by GLC, 1488.
- Haller, W.** Correlation between chromatographic and diffusional behaviour of substances in beds of pore-controlled glass: contribution to the mechanism of steric chromatography, 3293.
- Halpaap, H.** Standardisation of TLC with pre-fabricated layers, 2.  
— and **Klatyk, K.** Chromatographic properties of silica gel having different pore structures, 2, 3.  
— and **Reich, W.** Chromatographic properties of aluminium oxides having different structures, 2.
- Halpern, Y., Houminer, Y., and Patai, S.** Determination of trimethylsilyl derivatives of glucosides by GLC with inert internal standards, 720.
- Halsted, J. A.** See **Hackley, B. M.**, 1997.
- Hamaguchi, H., Tomura, K., Onuma, N., Higuchi, H., and Suda, K.** Neutron-activation determination of indium in rocks, 1170.  
— See also **Ishimori, Tomitaro**, 1734.
- Hamberg, M., Niehaus, W. G., jun., and Samuelsson, B.** Preparation, isolation and characterisation of a derivative of malonaldehyde, 2035.
- Hambleton, F. H.** See **Armistead, C. G.**, 479.
- Hameau, G.** See **Voinovich, I. A.**, 73.
- Hamilton, D. J.** TLC of bromacil residues in soil, 2740.
- Hamm, R., and Hofmann, K.** Sulphur-containing compounds of meat. IV. Determination of mercapto-groups in myofibrillae with sodium *p*-chloromercuribenzoate, 2173.  
— See also **Hofmann, K.**, 119.
- Hammar, C.-G., and Holmstedt, B.** Identification of chlorpromazine metabolites in human blood by GLC, 2604.
- Hammerton, C.** Colorimetric determination of ferrous iron in water, 2762.
- Hammond, E. W.** See **Morris, L. J.**, 731.
- Han, J.** See **Oró, J.**, 750.
- Hanai, T.** See **Funasaka, W.**, 1322.
- Hanig, R. C., and Aprison, M. H.** Determination of calcium, copper, iron, magnesium, manganese, potassium, sodium, zinc and chloride in brain, 795.
- Hanin, I.** See **Jenden, D. J.**, 2069.
- Hankin, L.** Determination of non-fat dry milk solids in meat products with a specific enzymic assay for lactose, 1540.
- Hanley, A. V.** See **Wachs, H.**, 1000.
- Hannapel, R. J.** See **Hardesty, J. E.**, 2736.
- Hannema, U., and Boef, G. den.** Graphs of complexometric titrations of mixtures of metal ions with one ligand. I. Mathematical expressions, 539; II. Conditions for sharp end-points, 1108.
- Hänni, H.** Determination of traces of manganese in milk and cheese, 375.



- Hanoq, M., and Molle, L.** Direct spectrophotometric determination of fluoride with the cerium<sup>III</sup>-alizarin complexan chelate, 1861.
- Hanok, A., and Kuo, J.** Stability of a reconstituted serum for the assay of fifteen chemical constituents, 1987.
- Hansen, K. L.** See Freier, E. F., 2050.
- Hansen, P. M. T., and Chang, J. C.** Quantitative recovery of carboxymethylcellulose from milk and milk products, 2720.
- Hanssen, E.** See Sturm, W., 2184.
- Hara, H.** See Yoshimura, C., 36.
- Hara, T.** See Yoshimura, C., 36.
- Haraguchi, H.** See Fujiwara, S., 2318.
- Harania, V. R.** See Barnett, M. I., 1719.
- Harasawa, S.** See Murakami, M., 536.
- Harbison, R. D., Boerth, E. C., and Spratt, J. L.** Quantitative determination of free and conjugated bilirubin by diazo coupling and a liquid-extraction and column-chromatographic technique, 334.
- Hardcastle, J. E., Hannapel, R. J., and Fuller, W. H.** Liquid-scintillation technique for the radio-assay of calcium-45, 2736.
- Hardwick, J. L., and Martin, C. J.** Use of fluorine-18 in quantitative biological studies, 1412.
- Hardy, J. A., Macnab, J. I., and Webb, G.** Electronic digital integrator for use with GLC, 447.
- Hargrove, G. L., and Sawyer, D. T.** Thermodynamics and separation efficiencies for GLC with modified alumina columns, 2797.
- Hariharan, P. V., Poole, G., and Johns, H. E.** Location and elution of radioactive streaks on an electropherogram or a chromatogram, 2808.
- Harke, H.-P.** Analysis of tobacco-smoke condensate and condensate fractions, 825.
- Harkness, A. C.** See Girard, L., 455.
- Harkness, R. A., and Torrance, A. M.** Automated introduction of solid samples in GLC, 2266.
- Harless, H. R.** See Quick, Q., 1944.
- Harlow, G. A.** See Morman, D. H., 1693.
- Harmeyer, J., Sallmann, H.-P., and Ayoub, L.** Use of 2,4,6-trinitrobenzenesulphonic acid for detection in automated amino-acid analyses, 2074.
- Harrill, P. G.** See Iverson, J. L., 1571.
- Harris, J. O.** See Aitken, R. A., 970.
- Harris, Melvyn J., Stewart, A. F., and Court, W. E.** Assay of *Rauwolfia cumminsi* by quantitative TLC, 3201.
- Harris, Michael J.** See Turvey, J. R., 1324.
- Harris, W. E.** See Ball, D. L., 2278, and Sutton, R., 1913.
- Harris, W. O.** See McKinney, R. W., 2801.
- Harrison, A. J., and Cook, A.** Routine screening procedure for toxicological specimens, 1413.
- Harrison, S.** Determination of small amounts of formaldehyde in acetaldehyde, 1327.
- Harrison, V. J., and Weatherston, J.** TLC of simple naturally occurring benzoquinones, 1343.
- Harrison, W. W., and Caulfield, K.** Line sources in absorption spectrometry, 1091.
- Hart, I. C.** Nomograms for calculating dissolved oxygen contents and exchange coefficients, 2756.
- Hart, R. A.** See Sinclair, M. J., 1991.
- Hartkopf, A.** See Karger, B. L., 1914.
- Hartlage, F. E., jun.** Effect of amines on atomic-absorption analyses, 1086.
- Hartley, F. E., and Inglis, A. S.** Determination of aluminium in wool by atomic-absorption spectroscopy, 268.
- Hartmann, E., and Röpke, H.** Purity and stability of iodine-containing X-ray contrast media of the aminobenzoic acid series, 941.
- Hartsaw, P.** See Comer, J. P., 2142.
- Hartung, R., and Möbins, H.-H.** Oxygen-ion-conducting solid electrolytes and their applications. XX. Amperometric gas titrations with a solid-electrolyte indicator cell, 1762.
- Harvey, B. R.** See Dutton, J. W. R., 2768.
- Harvey, D. R.** See Birnie, G. D., 2249.
- Harvey, M. E.** Precision temperature-controlled water bath, 2325.
- Harzdorf, C.** Photometric titration of fluoride with zirconium solution, 133. Photometric titration of fluoride with lanthanum, cerium or yttrium, 1249.
- and Steinhauser, O. Determination of fluorine in fluorspar, 2453.
- See also Steinhauser, O., 686.
- Hasegawa, S.** See Nagel, C. W., 1429.
- Hashizume, G.** See Kuroda, K., 940, 2699.
- Hashizume, T., and Sasaki, Yukiko.** Determination of orthophosphate by GLC, 805.
- Hashmi, M. H., Chughtai, F. R., Adil, A. S., and Qureshi, T.** Identification of seventeen vitamins by circular TLC, 924.
- Haskin, L. A.** See Norman, J. C., 2392.
- Hassan, S. S. M.** See Awad, W. I., 1908.
- Hasselbarth, U.** Determination of free and bound active chlorine in water, 2759.
- Hasselmann, M.** See Metais, M. C., 953.
- Hastings, P., and Wong, J. T.** Procedure for extracting nucleotides from thin-layer plates, 2100.
- Hatano, S.** See Omura, H., 342.
- Hattori, T., Mukai, K., Asahi, Y., Takahisa, Michio, Kuroba, T., and Tsukahara, I.** [Annual review, 1967]—Analysis of non-ferrous metals, 1734.
- Hauck, H., and Schedling, J. A.** 'Conifuge' for fractional precipitation of aerosol solids, 1732.
- Hauenstein, H.** See Richter, G., 1506.
- Haumann, J. R., and Studier, M. H.** Blanking circuit for a magnetic electron multiplier in a time-of-flight mass spectrometer, 2836.
- Hauptrich, H.-E.** See Eisenbrand, J., 1091.
- Haury, Dr. Heinz, Chemische Fabrik.** Standard solution for the determination of the bilirubin content of body liquids, 2655.
- Hauser, T. R., and Kolar, M. A.** Spectrophotometric determination of hydrogen peroxide in aqueous media with 4,4'-vinylenedipyridyl, 1767.
- Havas, J.** See Pungor, E., 2317.
- Havel, J., and Sommer, L.** Uranyl complexes with phenolic ligands. X. Spectrophotometric determination of uranium with 5-sulphosalicylic acid, 2934.
- Havelková, L.** See Bartušek, M., 96, 1159.
- Haverback, B. J.** See Rinderknecht, H., 345, 2123, 2674.
- Haworth, D. T.** See Zetlmeisl, M. J., 21.
- Hayamizu, K.** See Yamamoto, O., 1734.
- Hayashi, S., Sugahara, K., and Teranishi, K.** Determination of aluminium, chlorine, titanium and iron in polyethylene by X-ray fluorescence analysis, 1385.
- Hayashi, Y.** See Yamamoto, Yuroku, 66, 240, 1551.
- Haylett, T.** See Lindley, H., 2082.
- Haynes, B. J.** See Rollins, O. W., 77.
- Haynes, J.** See Guilbault, G. G., 3187.
- Haynes, O. R.** See Quick, Q., 1944.
- Haywood, P. E., Horner, M. W., and Rylance, H. J.** TLC of neutral drugs, 916.
- Headridge, J. B., Ashraf, M., and Dodds, H. L. H.** Polarography of inorganic substances in dimethylformamide, 1747.
- Heady, H. H.** See Whitehead, A. B., 2820.



- Heathcote, J. G., and Washington, R. J. Determination of small amounts of amino-acids, 320.
- Hecht, F. See Markl, P., 1752, and Schaudy, R., 178.
- Heerden, F. van. See McMurray, W. R., 2368.
- Heeringa-Kommer, M. See Gouverneur, P., 1364.
- Heffelfinger, R. E., Litsey, C. T., Chase, D. L., and Henry, W. M. Determination of oxygen-zirconium ratio in oxygen-deficient zirconia, 1827.
- Hegedűs, V. See Péter, F., 2456.
- Heide, R. ter. Studies on terpenes. II. Characterisation of monoterpene esters by GLC and TLC, 3.
- Heidinger, R. See Hofer, A., 2439.
- Heimer, J. T. See Thompson, R. N., 2221.
- Heineman, W. R. See Murray, R. W., 490.
- Heinrich, K. F. J. Quantitative electron-probe micro-analysis: progress report, 1097.
- See also Yakowitz, H., 2288.
- Heinze, G. See Triems, K., 2556.
- Heistand, R. N. Spectrophotometric determination of some aldehydes and ketones with 2,4-dinitrophenylhydrazine, 722.
- Hejduk, J., and Novák, J. Analysis of aluminium nitride. I. Determination of nitrogen and aluminium after decomposition with hydrochloric acid under pressure, 2914.
- Heley, M. R. See Girling, G. W., 1644.
- Helin, E. See Nichiporuk, W., 688.
- Hellberg, H. International co-operation in drug control, 1.
- Helmholtz, O. See Bensch, H., 1160.
- Helz, A. W. See Dinnin, J. I., 471.
- Henderson, P. Determination of phosphorus in rocks and minerals by activation analysis, 1207.
- Hendricks, P. See Blom, L., 1535.
- Hendrickson, J. G. Basic gel-permeation chromatography studies. II. Benzene as eluent, 3047.
- Hendrickson, R. See Meagher, W. R., 1562.
- Hendrikse, P. W. See Mutter, M., 3099.
- Henkelmann, R., Aumann, D. C., and Born, H.-J. Determination of oxygen by activation analysis with fast neutrons, 1223.
- Henneberg, D. See Schomburg, G., 3, 2505.
- Hennon, G. J. See Lawless, E. W., 1666.
- Hénoc, J. Calculation of fluorescence excited by the continuum, 1097.
- Henrion, G., and Pungor, E. Determination of alkali-metal and alkaline-earth-metal ions by precipitation titration in non-aqueous solvents, 558. Quantitative determination of alkali and alkaline-earth metals in admixture by chloride precipitation titration in non-aqueous media, 1768.
- Henriques, O. B. See Gapanhuk, E., 3175.
- Henry, W. M. See Heffelfinger, R. E., 1827.
- Henseke, G. See Wildenhain, W., 704.
- Hensel, G. See Wurziger, J., 2712.
- Hentrich, K., and Pfeifer, S. Metal thiocyanate complexes of alkaloids and organic bases and their use in complexometric determinations, 917. Complexometric determination of phenytoin, 928.
- Henty, D. N., and Vary, S. Characteristic resonance bands of solvents used in nuclear magnetic resonance spectrometry, 485.
- Henwood, C. R. Instability of amitriptyline base, 2150.
- Herman, M. See Elfers, L. A., 1703.
- Hermann, T. S. See Smith, P. J., 2157.
- Hermans, R. B., and Kamp, P. E. Scheme for identification of sedatives and some psychotherapeutic drugs in toxicological analysis, 1416.
- Hernández Méndez, J., and Lucena-Conde, F. Analytical chemistry of less-common oxidation states. V. The manganese<sup>I</sup> cyanide complex as electrolytically generated reagent for ferricyanide, 2484; VI. Determination of thallium<sup>I</sup> with electrolytically generated octacyanomolybdate<sup>V</sup>, 2390.
- Herspers, U. See Wölfe, R., 1148.
- Herr, W. See Wölfe, R., 1148.
- Herrero, C. A. See Álvarez Herrero, C.
- Herrmann, C. C. Optial rotatory dispersion adapter, 2838.
- Herrmann, R., and Léger, J. Potentialities for organic micro-determinations by combustion in oxygen, 2496.
- Herting, D. C., and Drury, E.-J. E. TLC with pre-coated alumina sheets. II. Application to tocopherols, 1480.
- Heslop, R. B., and Pearson, E. F. Liquid extraction of molybdophosphoric and molybdoarsenic acids: application to the determination of phosphorus in the presence of arsenic, 628.
- Hess, J. W., MacDonald, R. P., Natho, G. J. W., and Murdock, K. J. Serum creatine kinase: evaluation of a commercial spectrophotometric determination, 908.
- Hesse, G. Gas chromatography of tautomers, 3.
- Hetman, J. S., and Puyo, M. Coulometric determination of vanadium in rocks and minerals, 2436.
- Puyo, M., and Thiel, R. Polarographic determination of iodide in water, 2760.
- Hettinger, J. D. Continuous determination of amino-acids based on enzymic decarboxylation, 3164.
- Heusser, D. Reproducibility of TLC - colorimetric determinations, 2. TLC of fatty acids of silanised silica gel, 2.
- Hewett, A. J. W. See Ribbons, D. W., 2823.
- Heyer, F. C. Step-wise EDTA titrations for zinc or cadmium and alkali cyanide in plating baths, 63.
- Heymann, D., and Anders, E. Determination of aluminium-26 in meteorites, 181.
- Heyn, A. N. J. See Guibault, G. G., 1483.
- Hibbitts, J. O. See Schaefer, E. A., 1765.
- Hidrioglou, M. See Jenkins, K. J., 1411.
- Hiefner, R., and Burwig, D. Determination of oxygen in bottled beer, 2729.
- Higgins, C. T. See Burns, D. T., 3079.
- Hignett, R. C. Direct fluorimetry of phenolic compounds on thin-layer chromatograms, 1431.
- Higuchi, H. See Hamaguchi, H., 1170.
- Hikawa, I. See Yoshimori, T., 10.
- Hikime, S., Yoshida, H., and Taga, M. Application of urease for the precipitation of nickel dimethylglyoximate by urea from homogenous solution, 1880.
- Hilbig, G. See Schulze, H. J., 3372.
- Hildebrand, G., and Leschner, O. Determination of chain-length distribution of normal and branched-chain paraffins by GLC, 3095.
- Hildenbrand, D. L. See Boyer, M. H., 2311.
- Hildenbrand, K. Identification of riboflavin in quinoline yellow in bakery and confectioner products, 1550.
- Hileman, O. E., jun. See Velazquez, J. A., 3037.
- Hill, A. R. C. See Smart, N. A., 961.
- Hill, D. W., and Newell, H. A. Variation with polarising voltage of the response to methane carbon dioxide and nitrous oxide of a macro argon ionisation detector for gas chromatography, 3309.
- Hill, R. J. See Perry, B. W., 2095.

- Hill, R. L., and Sonley, J. M. Four-channel chromatograph for rapid town-gas analyses, 1951.
- Hillecoat, B. L., Nixon, P. F., and Blakley, R. L. Effect of substrate decomposition on the spectrophotometric assay of dihydrofolate dehydrogenase, 905.
- Hillis, W. E., and Ishikura, N. Chromatographic and spectral properties of stilbene derivatives, 2037.
- Hines, W. G. See Bhargava, O. P., 2468.
- Hingerty, D. See Ryan, M. P., 2590.
- Hingle, D. N., Kirkbright, G. F., and West, T. S. Determination of mercury by atomic-absorption spectroscopy in an air-acetylene flame, 1157. Spectroscopy in separated flames. II. Use of the separated air-acetylene flame in long-path atomic-absorption spectroscopy, 2861.
- Hiraki, K. See Nishikawa, Y., 74.
- Hirakoba, A. See Morimoto, M., 1203.
- Hirata, H., and Arai, M. Determination of micro amounts of iron, aluminium and alkaline-earth elements in silicon carbide for varistors, 90. — See also Mori, Saburō, 1263.
- Hiratsuka, S., and Ichikawa, A. Continuous gas chromatography, 437.
- Hirokawa, K., and Gotō, H. Spectrometric determination of nitrogen in steel with a d.c. arc in the far-ultra-violet region, 3024.
- Hirose, Y. See Ishii, D., 198.
- Hiroshi, O. See Motojima, K., 1734.
- Hirsch, C., Kupfer, S., and Oreskes, I. Automated phosphate analysis of samples containing low concentrations of inorganic phosphate, 806.
- Hladik, J., and Pokorný, J. Analysis of unsaponifiable components of raw materials for cosmetics by column chromatography on molecular sieves, 769. — See also Pokorný, J., 2.
- Ilavcová, N. See Dobíášová, L., 1250.
- Iluchán, E. See Mayer, J., 117.
- Io, B. T. See McIsaac, W. M., 1355.
- Io, C.-M. Determination of aromatic acids, aldehydes, alcohols, and phenols by GLC, 2536.
- Ioare, H. C., Mostyn, R. A., and Newland, B. T. N. Application of an ultrasonic atomiser to atomic-absorption spectrophotometry, 3328.
- Iobart, E. W., Stevenson, R., and Kallmann, S. Determination of carbon in alkali metals, 40. — See also Kallmann, S., 2422.
- Iochella, N. J. Automated fluorimetric determination of tyrosine in blood, 869.
- Jockey, J. A. See Armistead, C. G., 479.
- Jockings, W. A., and Kangas, W. J. Safety shutter for the General Electric powder diffractometer, 1653.
- Jodson, V. See Emery, A. E. H., 2108.
- Joerman, K. C., and Kamel, K. Combined electrophoresis-chromatography for better peptide separation, 327.
- Jofer, A., and Heidinger, R. Spectrophotometric determination of traces of chromium in high-purity tantalum, 2439.
- Offman, C. S., and Anacker, E. W. Water solubilities of tetradecanol and hexadecanol, 218.
- Offmann, E. Volumetric determination of barium metaborate in paint after extraction with mannitol solution, 3115.
- Offmann, E. G. See Ziegler, E., 468.
- Offmann, G. Photometric determination of phosphatase activity in soil, 986.
- Offmann, R. L., McConnell, D. G., and Evans, C. D. Silicic acid column chromatography: adsorption mechanism and solvent systems, 1042.
- Hoffmann, R. L. See also McConnell, D. G., 1043.
- Höfer, H., and Sorantin, H. Determination of aluminium, vanadium, manganese and gold in stony and iron meteorites by activation analysis, 687.
- Hofmann, K., and Hamm, R. Determination of hydrogen sulphide with NN-dimethyl-p-phenylenediamine and iron<sup>III</sup> chloride, 119. — See also Hamm, R., 2173.
- Hofmann, W. See Ostromow, H., 1545.
- Holcombe, W. A. See Ramaley, L., 1245.
- Holden, T. F. See Della Monica, E. S., 2714.
- Holland, J. F. See Iwata, T., 2087.
- Holland, W. J., and Bozic, J. Spectrophotometric determination of palladium with di-2-pyridyl ketoxime, 2482.
- Hollandsworth, C. E., and Bucher, W. P. Use of a wide-range pulse-shape discrimination system to distinguish between neutrons and  $\gamma$ -rays, 2847.
- Hollebone, B. R. See Banthorpe, D. V., 1916.
- Holler, J. J., jun. See Rudolph, G. G., 802.
- Höller, P., and Slickers, K. Spectrometric analysis of raw materials and slags by the 'tape technique', 665.
- Hollifield, R. D., and Conklin, J. D. Determination of furazolidone in urine, 2606.
- Hollis, O. L. See Dow Chemical Co., 3303, and Wilhite, W. F., 2794.
- Holló, A. See Czeglédi-Jankó, G., 998.
- Holloway, G. L. See Forss, D. A., 376.
- Holloway, P. J. See Betts, T. J., 1505.
- Holm, V., Steinnes, E., and Waaler, T. Dose control of suppositories by neutron-activation analysis, 3198.
- Holmes, D. C., Simmons, J. H., and Tatton, J. O'G. Determination of chlorinated hydrocarbons in British wildlife, 404.
- Holmstedt, B. See Hammar, C.-G., 2604.
- Holt, K. E. See Anderson, R. E., 403.
- Holtz, A. H. See Assendelft, O. W. van, 333.
- Holyńska, B., and Langer, L. Determination of zirconium in zirconium-bearing sands by non-dispersive X-ray fluorescence, 1826.
- Holzappel, H., and Schöne, K. Polarographic determination of sulphur dioxide in aqueous solution, 640. — and Stottmeister, U. Polarographic determination of thiols and mercury with 5-methylisothioronium sulphate, 707. Amperometric micro-determination of dithiocarbamates with use of a vibrating platinum electrode, 3075.
- Holzbecher, Z. Spectrophotometric determination of ketones in phenol, 1937.
- Holzer, F. J. See Day, E. W., jun., 2191.
- Homolka, J., and Soušek, O. Determination of serum cathepsin activity, 346.
- Honda, M. See Shima, M., 180.
- Honig, B. E., Woolston, J. R., and Kramer, D. A. Gelatin-free ion-sensitive plates for mass spectrometry, 1674. — See also Woolston, J. R., 1673.
- Hoog, P. de, Reek, S. van den, and Brower, F. Determination of casein in hydrolysed lactalbumin, 2715.
- Hooper, B. J., Shaw, A., and Tims, G. A. Sterilisation, stability and determination of diamorphine injection, 1496.
- Hoover, W. L., and Duren, S. C. Determination of molybdenum in fertilisers by atomic-absorption spectrophotometry, 1579.
- and Reagor, J. C. Interferences encountered in determining potassium in fertilisers by atomic-absorption spectrophotometry, 2207.



- Hoppe, H., and Romminger, K. Detection and semi-quantitative determination of biphenyl and 2-phenylphenol on citrus fruits, 385.
- Horáček, Jan. See Přibil, R., 97, and Vydra, F., 601.
- Horáček, Josef. See Vlastník, J., 1363.
- Horáček, S. See Litomiský, J., 612.
- Horák, J., and Okáč, A. Reaction and determination of uranyl ion with 2,3,4-trihydroxybenzenesulphonic acid, 2407.
- Horák, M. See Řeřicha, R., 3055.
- Horák, P. Determination of ergometrine plus ergometrinine in presence of ergoclavine alkaloids, 3197.
- Hörhammer, L., and Wagner, H. Teaching of pharmacognosy. XIV. Determination of ouabain in seeds of *Strophanthus gratus* by TLC, 2685.
- See also Wagner, H., 1344.
- Horiuchi, Y., and Nishida, H. Spectrophotometric determination of iron<sup>III</sup> with Chrome Azurol S, 140. Spectrophotometric determination of palladium with Chrome Azurol S, 682. Spectrophotometric determination of gallium or indium with Chrome Azurol S, 1167.
- Horn, F. H. Evaluation of electronic-grade silicon and trichlorosilane by a frozen-drop method, 1189.
- Hornbeck, R. F. Graft copolymers as substrates in column extractions. I. Non-chromatographic separations on extraction columns, 1038; II. Characteristics of hydrophilic-organophilic columns in chromatographic separations, 1038.
- Horner, M. W. See Haywood, P. E., 916.
- Horning, E. C. See Chambaz, E. M., 846, and Horning, M. G., 2633, 3158.
- Horning, M. G., Moss, A. M., Boucher, E. A., and Horning, E. C. GLC separation of hydroxyl-substituted amines of biological importance including the catecholamines: preparation of derivatives for electron-capture detection, 3158.
- Moss, A. M., and Horning, E. C. Formation and GLC of isomeric oxosteroid methoxime derivatives, 2633.
- Horton, R., Kato, T., and Sherine, R. Determination of testosterone in male plasma, 2054.
- Horváth, C. G., and Lipsky, S. R. Peak capacity in chromatography, 1624.
- Preiss, B. A., and Lipsky, S. R. Fast liquid chromatography: investigation of operating parameters and separation of nucleotides on pellicular ion exchangers, 335.
- Horvath, L. See Turina, S., 2.
- Horwitt, M. K. See Vogel, W. H., 2068, and Witting, L. A., 2626.
- Hosoda, H. See Nambara, T., 842, 1443.
- Hosoyama, Y., Fukuda, Y., and Shimadate, T. Paper chromatography of alkaline phosphatase isoenzymes, 911.
- Hoste, J. See Boeck, R. de, 621, Cornelis, R., 2409, and Dams, R., 1158.
- Ho-Tun, E., and Rossouw, A. J. Two types of sample holder for the Philips PW 1064 sample-spinning device used in the PW 1050 X-ray diffractometer, 2811.
- Houck, J. C. See Mahanand, D., 1996.
- Houghen, F. W. See Levy, R. L., 2790.
- Houlbrooke, A., Isles, G., and Russell, R. S. Composition and identification of mixtures of ground almonds, cashew nuts and groundnuts, 1547.
- Houle, M. J., Powell, R. L., and Fintschenko, P. Absorption of u.v. radiation by various carbohydrates in strong sulphuric acid, 1323.
- Houminer, Y. See Halpern, Y., 720.
- Houston Society for Paint Technology. Direct determination of chemical solvents in coating materials by GLC, 1393.
- Houtman, J. P. W. Determination of trace elements by neutron-activation analysis, 516.
- See also Ooij, W. J. van, 3.
- Hovorka, J. See Vulterin, J., 1254.
- Howard, J. W., Fazio, T., and White, R. H. Determination of polycyclic aromatic hydrocarbons in solvents used in the extraction of edible oils, 2734.
- Fazio, T., White, R. H., and Klimeck, B. A. Extraction and determination of polycyclic aromatic hydrocarbons in 'total diet' composites, 2170.
- See also Fazio, T., 2189.
- Howard, S. F. See Yip, G., 2192.
- Howlett, M. R., and Selzer, G. B. Identification of colistin and polymyxin B by TLC, 922.
- Howorth, P. J. N., and Zilva, J. F. Determination of uric acid levels in uraemia by enzymic and colorimetric techniques, 2638.
- Hozumi, K., and Tamura, H. Theory of cell balance in a thermal conductimeter, and a practical method for counter-balancing, 1643.
- and Umemoto, K. Decimilligram determination of organic nitrogen by a sealed-tube combustion method, 202. Centimilligram determination of organic nitrogen with sealed-tube combustion, 1305.
- Hrabánková, E. See Beran, P., 2455.
- Hradeč, J. Chromatographic determination of cholesteryl 14-methylhexadecanoate in biological materials, 3149.
- Hrdina, J. See Československá Akademie Věd, 2302.
- Hrdý, O. Photometric determination of derivatives of 4-hydroxycoumarin, 1525.
- Hrivňák, J., and Konečný, V. Separation of S-alkyl NN-dialkylthiocarbamates by GLC, 1338.
- and Štota, Z. GLC of free phenolic pesticides, 2220.
- Hromádka, L. Transistorised stabiliser for a spectrophotometer, 1663.
- Hroncová, D. See Tölgyessy, J., 2328.
- Hsia, D. Y.-Y. See Inouye, T., 2668.
- Huang, J.-T., and Wang, K.-T. Chromatography of some barbiturates on polyester-based polyamide layers, 1514.
- Huang, W.-H. Determination of citronellal by relative volume method, 2559.
- Huang, W.-T. See Li, S.-C., 232.
- Hubbard, W. D., and Sheppard, A. J. GLC determination of fat-soluble vitamins. VI. Application to pharmaceuticals containing menaphthone, 2145.
- Huber, A. See Korkisch, J., 1744.
- Huber, C. N., Schobell, H. D., Tai, H., and Fische, E. E. TLC of the malto-oligo- and -megasaccharides with mixed support and multiple irrigations, 2031.
- Huber, C. O. See Sand, J. R., 718.
- Huber, W. Determination of concentration by means of u.v. remission of spots on thin-layer chromatograms, 2.
- Hübner, H. See Rolle, W., 698.
- Hübner, K. See Bensch, H., 1160.
- Hucker, H. B., and Miller, J. K. Technique for the improvement of gas-chromatographic properties of tertiary amines such as amitriptyline, 2695.
- Huckins, R. See Weiss, P. J., 1507.
- Hudson, B. G. See Blatt, W. F., 877, 2247.
- Hudson, E. J. See Ault, R. G., 971.
- Huettemann, R. E. See Shroff, A. P., 936.



- Hughes, J. D. H., and Rogers, G. T. High-resolution autoradiography of trace boron in metals and solids, 69.
- Hughes, M. J. See Chester, R., 3281.
- Hughes, R. G. See Garner, C. S., 2810.
- Hughes, R. H. See Clappitt, B. H., 2571.
- Huisman, T. H. J. See Dozy, A. M., 3180.
- Iulianicki, A. Complex-formation reactions of dithiocarbamates, 1737.
- Jumbel, R. Determination of *p*-hydroxyphenylpyruvic, lactic and acetic acids in urine, 2620.
- Jume, D. N. See Andersen, N. R., 3279, and Phipps, A. M., 1647.
- Jummel, D. O. Infra-red spectroscopy of polyimide wire-lacquers, 3114.
- Junt, B. J., and Rigby, W. Short-column chromatography, 1036.
- Junt, G. R., and Ross, H. P. Two-directional reflectance accessory for i.r. spectroscopic measurements, 476.
- Junt, J. L., and Winkel, R. G. Carbon furnace i.r. source, 2304.
- Junt, S. See Ayad, S. R., 1627.
- Junter, J. D. See Guerrant, G. O., 1578.
- Jurford, T. R., and Boltz, D. F. Indirect u.v. and atomic-absorption spectrophotometric determination of phosphorus and silicon, 2428.
- Jurwitz, A. R., Burke, H. J., and Marra, R. A. Separation of some oestrogen sulphates from their oxidation products, 1524.
- Iussan, A. See Ramanarao, M. V., 743.
- Iutzul, M. G., and Wright, G. F. The 'Moscow' method of TLC, 2785.
- Iuynh, C. T. See Chamhu, C., 3337.
- Iyden, H. See Gandini, S., 3176.
- Iynie, I., Večerek, B., and Štěpán, J. Photometric determination of inorganic phosphate in blood serum with methyl violet and ammonium molybdate, 1407.
- See also Večerek, B., 2806.
- I
- Iococca, D., Goldwasser, A., and Ghiglione, M. Determination of iron or vanadium in the presence of large amounts of the other by atomic-absorption spectrophotometry, 3019.
- Ishida, T., and Nobuoka, M. Ultra-micro determination of total and direct bilirubin in serum by a modified 'alkaline azobilirubin blue' reaction, 2654.
- Ishikawa, A. See Hiratsuka, S., 437.
- Ishikawa, T., Kato, Kiyoshi, and Kakihana, H. Detection of aluminium with ion-exchange resin containing 5-chloro-3-(2,4-dihydroxyphenylazo)-2-hydroxybenzenesulphonic acid, catechol violet or 4,4'-bis(dihydroxyphenylazo)stilbene-2,2'-disulphonic acid, 586.
- Isonomou-Petrovitch, N., and Büchi, J. Determination of isopentyl-oxy-groups by GLC, 2679.
- Ildings, F. A. See Spell, W. H., 3359.
- Ileno, R. See Fukumauchi, H., 201.
- Iso, F. di. Qualitative and quantitative TLC of guanidine derivatives and differentiation of phosphagens from other phosphorus compounds, 2066.
- Isube, R. See Del Bianco, F. M., 785.
- Ishida, C., and Fuwa, K. Studies with a multi-channel flame spectrophotometer. II. Simultaneous determination of magnesium, calcium, copper, manganese and chromium, 285; III. Simultaneous analysis for magnesium, calcium, copper, manganese and chromium: a method devoid of cation and anion interference, 285.
- Ikedo, N., and Oguma, K. Separation of metal ions by solubilisation TLC, 1122.
- Ikekawa, N. See Sato, Katsuya, 1572.
- Ikeo, B. See Saito, H., 1664.
- Illaszewicz, A., Müller, Kurt, Rabussay, D., and Spitz, H. Redox methods with neutron-activated metallic silver as radio-reagent, 2332.
- Imai, T. Determination of zinc by atomic-absorption spectrophotometry, 60.
- See also Nishimura, K., 56.
- Imanari, T., and Tamura, Z. Gas chromatography of glucuronides, 822.
- Imhoff, U. See Kraut, H., 2009.
- Imura, S., Fukutaka, K., and Yamada, T. Determination of triethyl-lead ions in aqueous solution with sodium tetraphenylborate, 1609.
- Imyanitov, N. S. See Kuvaev, B. E., 724.
- Inami, Y. H. See Boyer, M. H., 2311.
- Inamoto, I. See Kammer, Ö., 1270.
- Inglis, A. S. See Hartley, F. R., 268.
- Inglis, N. R. See Fishman, W. H., 2120.
- Ingr, N., Kakolowicz, W., Sillén, L. G., and Warnqvist, B. High-speed computers as a supplement to graphical methods. V. HALTAFALL: a general program for calculating the composition of equilibrium mixtures, 531.
- Inoue, T. See Uchikawa, H., 1734.
- Inouye, T., Nadler, H. L., and Hsia, D. Y.-Y. Determination of galactose-1-phosphate uridylyl-transferase in red and white blood cells, 2668.
- Institut de Recherches de la Sidérurgie Française. Improvements in the withdrawal of samples of gases and in the sampling of gases circulating in large-diameter conduits, 1615.
- Inui, T. See Shono, T., 778.
- Iofa, B. Z., and Yushchenko, A. S. Extraction of complex acids into oxygen-containing solvents: mechanism of the extraction of bi- and quadrivalent polonium from hydrochloric acid solutions, 647.
- Ioffe, É. Sh., and Karaseva, A. D. Extraction-photometric determination of cobalt in products of nickel production, 1282.
- Ioffe, I. I. See Mokrousov, P. V., 269.
- Ionescu, T. D., and Tudorache, G. Inorganic synthetic ion exchangers. I. Salts of some polybasic acids with multivalent cations, 3316.
- Ionitá, R. See Popescu, R., 443.
- Iordanov, B. See Iordanov, N., 3002.
- Iordanov, N., Mareva, S., Borisov, G., and Iordanov, B. Substituted phosphonic acid esters as reagents for the separation of molybdenum from rhenium by solvent extraction, 3002.
- Irako, K., Anzai, S., and Onishi, A. Quantitative verification of the existence of butadiene-styrene copolymer, 3113.
- Iritani, N., Miyahara, T., Yano, K., and Kitano, S. Chelatometric determination of pharmaceuticals. VI. Determination of aluminium salts, 1532.
- Irving, H. M. N. H., and Lewis, D. Extraction of indium halides into organic solvents. VII. Distribution of indium between hydrochloric acid and binary solvent mixtures containing isobutyl methyl ketone, 2918.
- Irving, R. J. Homogeneous precipitation of basic aluminium benzoate with a buffer solution, 588.
- Isaacs, J. See Klein, B., 1994.
- Isagai, Kazuyo. See Isagai, Kiyoharu, 1776.
- Isagai, Kiyoharu, and Isagai, Kazuyo. Spectrophotometry of copper with derivatives of picolinaldehyde 2'-hydroxyanil, 1776.
- Isayan, G. A., Volkova, A. P., and Movsisyan, F. A. Spectrophotometric determination of melamine in technical melamine, 2575.

- Isenhour, T. L. See Jurs, P. C., 1713.  
 Ishibashi, R. See Morimoto, M., 1203.  
 Ishibashi, W. See Kitano, Y., 114.  
 Ishida, K. See Kuroda, R., 2905.  
 Ishii, D., Hirose, Y., and Mori, H. Non-destructive determination of hydrogen in organic solvents by scattering of thermal neutrons, 198.  
 Ishii, T. Application of automated temperature measurement to small samples, 1720.  
 Ishii, Y. See Muroi, K., 713.  
 Ishikura, N. See Hillis, W. E., 2037.  
 Ishimori, Tatsujiro. See Ishimori, Tomitaro, 1734.  
 Ishimori, Tomitaro, Amano, H., Ueno, Kaori, Akatsu, E., Watanabe, K., Ishimori, Tatsujiro, Kawamura, S., Kiso, Y., Kato, Toyooki, and Hamaguchi, H. [Annual review, 1967]—Radioactive analysis, 1734.  
 Islamov, T. See Gureev, E. S., 1260.  
 Isles, G. See Houlbrooke, A., 1547.  
 Isomura, K. See Watanabe, Y., 215.  
 Isozaki, A. See Utsumi, S., 1603.  
 Ispravnikova, V. V. See Sinitsyn, N. M., 170.  
 Israel-Budnick, S. See Morales-Malva, J. A., 886.  
 Issa, R. M., and Abd-El-Nabey, B. A. Polarographic behaviour of telluric acid at a dropping-mercury electrode, 123.  
 Isupova, M. I. See Fedorova, N. D., 1757.  
 Isurugi, K. See Kinoshita, K., 3151.  
 Ito, Fumio. See Takahashi, Y., 343.  
 Itô, Fuzio. See Suzuki, K., 992.  
 Ito, Mitsuo [Sakai, Japan], Musha, S., and Tokuwame, M. Continuous photometric determination of phenols in waste water. II. Suppression of interference from sulphides, 421.  
 Ito, Mitsuo [Tokyo, Japan], Suzuki, M., and Yokoyama, T. Laser-excited Raman spectra of some organic crystals of the space group  $C_{2h}^{25}$ , 250.  
 Ito, S. See Okutani, T., 1849, and Utsumi, S., 199, 1603.  
 Ito, Y. See Masuda, E., 1230.  
 Itzchaki, J. See Ratner, R., 2877.  
 Ivanitskaya, S. A. See Kryukov, A. I., 2507.  
 Ivanov, N. P., and Talalaev, B. M. Atomic-absorption analysis with photographic recording, 470.  
 Ivanov, V. M. Spectrophotometric determination of palladium, 171.  
 — See also Busev, A. I., 1884, 1888.  
 Ivanova, A. I. See Evstratova, K. I., 2522.  
 Ivanova, E. V. See Subbotina, A. I., 2401.  
 Ivanova, L. I. See Rekkolainen, G. I., 2396.  
 Ivanova, N. K. See Nikitina, O. I., 2469.  
 Ivashina, V. A. See Lel'chuk, Yu. L., 2956.  
 Iverson, J. L. Programmed-temperature GLC for detecting trace amounts of fatty acids, 395.  
 — and Harrill, P. G. Determination of fatty acid composition of palm-kernel, illipe and shea-nut oils by urea fractionation and programmed-temperature GLC, 1571.  
 — and Weik, R. W. Correlation of fatty acid structure with preferential order of urea-complex formation, 394.  
 Iwamoto, I. See Tsukiyama, H., 1265.  
 Iwasaki, K. See Yamaguchi, H., 16.  
 Iwata, H. See Iwata, T., 2087.  
 Iwata, K. See Kamada, H., 1276.  
 Iwata, T., Iwata, H., and Holland, J. F. Isolation of albumin from human serum by means of trichloroacetic acid and ethanol, 2087.  
 Izmailova, D. N., and Zakhariya, N. F. Spectrographic determination of impurities in yttria, 2395.  
 Izumiya, N. See Noda, K., 3174.  
 Izutsu, K. See Fujinaga, T., 1115, and Senda, M., 1734.

## J

- Jacin, H., Moshy, R. J., and Fiore, J. V. Characterisation of pectic substances in tobacco stems, 823.  
 Jacini, G. See Lanzani, A., 990.  
 Jacks, T. J., and Kircher, H. W. Fluorimetric assay for the hydrolytic activity of lipase with use of fatty acyl esters of 4-methylumbelliferone, 910.  
 Jackson, M. L. See Alexiades, C. A., 1291.  
 Jackson, P. F. S., Whitehead, J., and Vossen, P. G. T. Use of an ion-beam chopper for improved precision in spark-source mass spectrometry, 1672.  
 Jacob, M. See Benoit, H., 775.  
 Jacob, T. J., and Nair, C. G. R. Potentiometric titration of phenol with dichloramine T in the presence of bromide, 239.  
 Jacobs, S. C. Assessment of automated nitrogen analysis of biological fluids with reference to the Kjeldahl method, 2595.  
 Jacobsen, V. M. See Forss, D. A., 944.  
 Jacobson, W. C. See Baron, R. L., 2190.  
 Jaquet, J., and Boutibonnes, P. Detection of aflatoxins by TLC: application to food microbiology, 2182.  
 Jacyszyn, K., and Laursen, T. Determination of the heterogeneity of  $\gamma$ -glutamyltranspeptidase, 2667.  
 Jaenicke, O. See Walisch, W., 1303.  
 Jäger, J., and Kassowitzová, B. Determination of benzo[a]pyrene in water, 3273.  
 Jain, B. D. See Bhat, A. N., 2933, and Manku, G. S., 678, 680.  
 Jain, D. S., and Gaur, J. N. Polarographic and amperometric determination of thallium<sup>I</sup> in presence of cadmium with 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid as masking agent, 1172. Analytical uses of 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid: amperometric titration of copper<sup>II</sup>, 2883.  
 Jakubek, B. See Spurný, J., 878.  
 Jakubiec, R., and Boltz, D. F. Indirect u.v. spectrophotometric determination of vanadium as molybdovanadophosphoric acid, 2435.  
 Jalowiecki, H. See Gregorowicz, Z., 1156.  
 James, B. T. Tritium-monitoring system in the DIDO and PLUTO reactor halls, 1591.  
 James, D. B. See Powell, J. E., 2923.  
 James, G. W. L. See Christianson, A. H., 1623.  
 James, K. C. See Barnett, M. I., 1719.  
 Janák, J., and Kubecova, V. Application of poroethylstyrene polymers in TLC: separation of aromatic and heterocyclic hydrocarbons and higher phenols on Porapak Q, 2.  
 — Onuška, F., and Duraš, Š. Determination of trace impurities in methanol by GLC, 2511.  
 — See also Onuška, F., 2541.  
 Janardhan, P. D., and Paul, A. Separation of the different valency states of tin or thallium by paper chromatography, 1822.  
 Janata, J., and Mark, H. B., jun. Small-volume flow-through cell for simultaneous polarographic coulometric, and spectrophotometric measurements, 1691.  
 Janauer, G. E., Carrano, J. D., and Johnston, R. L. Separation of metals of the alkali group by TL with a binary solvent mixture, 1769.  
 Janchen, D. Apparent influence of layer thickness on  $R_f$  values in TLC, 2.  
 — and Pataki, G. Quantitative *in situ* fluorimetry of thin-layer chromatograms, 2.



- Jander, K. See Lahmann, E., 2752.
- Jandrić, Z., Karas-Gaspárec, V., and Pinter, T. Thermodynamic and analytical studies of the distribution of odoriferous substances between two liquid phases. I. Absorptiometric determination of traces of thymol in various solvents, 365.
- Janes, N. F. See King, H. G. C., 574.
- Janicik, C. A., Brenner, R. J., and Schwartz, B. E. Specific assays for droperidol and fentanyl citrate in a pharmaceutical combination, 3219.
- Janik, B., Zeszutko, W., and Pelczar, T. Use of the hexakis-(S-thiosemicarbazide) derivative of 1,3,5,2,4,6-triazatriphosphorine for sequential potentiometric titration of silver and copper, 1780.
- Janko, Z. See Gruca, M., 995.
- Jankovic, S. G., Mitchell, D. T., and Buzzell, J. C., jun. Measurement of phosphorus in waste water, 1607.
- Jansseune, R. Titration of organic products in non-aqueous media, 1896.
- Jantje, V. V. See Monekoso, G. L., 2001.
- Janus, J. W., and Nellist, D. R. Determination of thiosulphate in photographic gelatin, 1398.
- Jasani, B. M. See Barnaby, C. F., 3348.
- Jasinski, R. J., and Kirkland, S. Analysis and distillation of 4-methyl-1,3-dioxolan-2-one, 254.  
— See also Fassel, V. A., 2404.
- Jasiński, T., and Kokot, Z. Potentiometric titration of picrates of organic bases in tetra-alkoxysilane media, 3083.
- Jasinskiene, E., and Bilidienė, E. Determination of traces of chromium<sup>VI</sup> by means of its catalytic effect on the oxidation of indigo carmine with hydrogen peroxide, 124.
- Jaskólska, H., and Minczewski, J. Mechanism of acetylacetone extraction, and the composition of metal-acetylacetone complexes, 547.
- Jasna, B. See Zioliński, Z., 662.
- Jaster, W., and Sáfaryi, D. R. Water-cooled electrode for discharge tubes, 3318.
- Jauzems, V., Sergeeva, V. N., and Mozheiko, L. N. Determination of certain substituted benzoic and cinnamic acids and analysis of their mixtures by means of decarboxylation, 2538.
- Jeczalik, A., and Lis, B. Examination and evaluation of precision and accuracy of perchlorate and tetraphenylborate methods for determining potassium in rocks and silicate minerals, 563.
- Jędrzejewska, H. See Jędrzejewski, S., 660.
- Jędrzejewski, S., and Jędrzejewska, H. Photometric determination of iron in rhenium with 1,10-phenanthroline, 660.
- Jeffery, P. G., and Kerr, G. O. Determination of vanadium in silicate rocks and minerals with *N*-(*o*-tolyl)benzohydroxamic acid, 1192.
- Jehle, D. See Woggon, H., 2705.
- Jelinek, H. H. G., and Kryman, F. J. Gas analysis by polymer-chain scission: determination of ozone by ozonolysis of polystyrene, 2223.
- Jeltes, R., and Veldink, R. Solid support as substractor in gas-chromatographic trace analysis, 2792.
- Jenden, D. J., Hanin, I., and Lamb, S. I. GLC micro-determination of acetylcholine and related compounds, 2069.
- Jeney, E., and Walther, J. TLC separation and determination of two new sulphonamides, 2154.
- Jenkins, A. E., and Majer, J. R. Examination of metal chelates by mass spectrometry, 2849.  
— Majer, J. R., and Reade, M. J. A. Mass spectrometry of metal chelates. II. 8-Hydroxyquinolates of common metals, 551.
- Jenkins, K. J., and Hidioglou, M. Removal of selenite and selenate, labelled with selenium-75, from aqueous solutions of amino-acids and plant metabolites containing selenium-75, 1411.
- Jenkins, R. W. See Blackmore, D. J., 2010.
- Jenkins, S. H. See Benford, K., 1014.
- Jenkins, W., McMillan, J. W., and Rees, T. B. Determination of protactinium-233 with 2,6-dimethylheptan-4-ol and isobutyl methyl ketone extraction, 83.
- Jennings, A. C., and Watt, W. B. Fractionation of plant material. I. Extraction of proteins and nucleic acids from plant tissue and isolation of protein fractions containing hydroxyproline from broad-bean leaves, 876.
- Jennings, E. C., jun., and Mitchner, H. Modified Hofmann degradation for analysis of *n*-alkylbenzyltrimethylammonium chlorides by GLC. I. C<sub>14</sub> to C<sub>18</sub> alkyl compounds, 2156.  
— See also Mitchner, H., 2156.
- Jensen, D. F. See O'Laughlin, J. W., 2925.
- Jensen, R., and Muraine, J. Study of the alteration of an oral solution based on sodium 4-amino-salicylate and sodium ascorbate. I. Determination, without separation, of sodium 4-amino-salicylate and 3-aminophenol, 938.
- Jentoft, R. E. See Gouw, T. H., 1031.
- Jentzsch, D., Kruger, H., Lebrecht, G., Dencks, G., and Gut, J. Technique for automated gas-chromatographic head-space analysis, 3.
- Jeromé, D. Y. See Goles, G. G., 188.
- Jesenák, V. See Tölgyessy, J., 2328.
- Jiménez Seco, J. L. Comparative study of various instrumental techniques for the analysis of aluminium and its alloys, 1792.  
— See also Gómez Coedo, A., 2487.
- Jiracek, V. Determination of amino-acids, sugars and some plant-growth substances, 2.
- Joe, F. L., jun. See Malanoski, A. J., 2175.
- Johannesen, B., and Erichsen, R. W. Potentiometric determination of potassium in pharmaceutical solutions, 363.
- Johannesson, J. K. Isotope-dilution analysis, with a modified sub-stoichiometric residue method, for carbonate and sulphate, 1188.
- Johansen, O., and Steinnes, E. Precision analyses for manganese in rocks by neutron-activation analysis, 3012.
- Johansson, M. See Lindskog, B., 489.
- John, P. T., and Bohra, J. N. Modified equation for pore volume and area distributions in finely divided and porous materials, 528.
- Johns, H. E. See Hariharan, P. V., 2808.
- Johnsen, R. E. See Starr, R. I., 446.
- Johnsen, U., and Kolbe, K. Determination of pentad and hexad concentrations in vinylidene chloride-vinyl acetate copolymers by proton resonance, 1390.
- Johnson, B. T. See Tomisek, A. J., 2.
- Johnson, Daryl E., Nunn, H. B., and Bruckenstein, S. Quantitative hydrolysis of sodium cyclamate and calcium cyclamate to cyclohexylamine followed by colorimetric analysis, 2718.
- Johnson, Donald E. See Bollinger, J. N., 514.
- Johnson, D. P. Spectrophotometric determination of 2-*t*-butyl-4-methoxyphenol and 2,6-di-*t*-butyl-*p*-cresol in vegetable oils, 1554.
- Johnson, G. V., and Young, R. A. Evaluation of interferences in the spectrophotometric determination of iron with ethylenediaminedi-NN'-(*o*-hydroxyphenylacetic acid), 2461.



- Johnson, H. A.** Micro-culture slide as X-ray diffractometer sample holder, 461. Goniometer stop for use with large sample-chamber in the General Electric X-RD5 X-ray spectrograph, 1082.
- and **Kinnaman, M. L.** Convenient modification of the General Electric X-ray spectrograph and diffractometer, 1081.
- Johnson, H. W., jun., Seibert, E. E., and Stross, F. H.** Belt detector for quantitative application in the fractionation of polymers by liquid chromatography, 2778.
- Johnson, J. F., and Barrall, E. M., II.** Study of micro-pore structure of porous polymer columns, 1041.
- Johnson, M. J.** See **Borkowski, J. D.**, 2844.
- Johnson, R. A., and Blair, D. C.** Channel selector for a single-channel pulse-height analyser, 1710.
- Johnson, R. D.** Peak generator for gas chromatography, 2277.
- Johnson, W.** See **Dichiario, J. V.**, 3084.
- Johnston, R. C.** See **Janauer, G. E.**, 1769.
- Jokl, V.** See **Muchová, A.**, 2339.
- Jolles, G. R., and Terlain, B. L.** Identification and determination of antibiotic residues in chickens fed on a spiramycin diet, 2607.
- Jolley, W. B., Allen, H. W., and Griffith, O. M.** Use of the ultra-centrifuge with acrylamide gel, 1622.
- Jolliffe, G. H., and Shellard, E. J.** Reproducibility of  $R_F$  values using pre-coated tubes and foils, 2. — See also **Shellard, E. J.**, 865.
- Joly, D.** Identification and determination of traces by gas chromatography - mass spectrometry, 3.
- Jona, F.** See **Peart, R. F.**, 1818.
- Jones, C. N.** Gas-chromatographic determination of hydrogen, oxygen, nitrogen, carbon monoxide, carbon dioxide, hydrogen sulphide, ammonia, water and  $C_1$  to  $C_6$  saturated hydrocarbons in refinery gases, 1356.
- Jones, D. D.** Individual quantitative estimation of bile acid conjugates in normal and lithogenic bile, 2062.
- Jones, G. B.** Estimation of microgram amounts of citrate in biological fluids and tissue, 826.
- Jones, G. G.** See **Caruso, J. A.**, 1938.
- Jones, G. R. N.** Micro-determination of nitrogen in biological materials, 1406.
- Jones, I. D., Bennett, L. S., and White, R. C.** Recording of thin-layer chromatograms on Polacolor film under u.v. radiation, 436.
- **White, R. C., Gibbs, E., and Denard, C. D.** Absorption spectra of copper and zinc complexes of pheophytins and pheophorbides, 2726.
- Jones, J. H.** See **Gross, F. C.**, 1374, 1375.
- Jones, K.** Analysis of aqueous formaldehyde solutions by GLC: evaluation of solid supports, 723.
- Jones, L. L.** See **Schmid, H. H. O.**, 833.
- Jones, R. M., Kuhn, W. F., and Varsel, C.** Spark-source mass-spectrometric analysis of tobacco ash, 1986.
- Jones, R. N.** See **Pitha, J.**, 482.
- Jones, W. F.** Studies in qualitative inorganic analysis. XXIX. Qualitative analysis of the calcium group, 576; XXX. Analysis of substances insoluble in acids, 540.
- Jones, W. J., and Keller, R. A.** Ion-exchange capacity of chromatographic paper, 2257.
- Jong, E. de, and McCullough, T.** Paper-chromatographic separation of formate and acetate, 227.
- Joon, K., and Deurloo, P. A.** Interference of some radioactive impurities with the liquid-scintillation determination of plutonium-239 in aqueous solution, 2410.
- Jopkiewicz, W. T.** See **Morris, G. F.**, 2205.
- Jordan, D. E., and Monn, D. E.** Spectrophotometric end-point detection for determination of magnesium in the presence of calcium and phosphate by titration with 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid, 575.
- Jordan, E. M., and Raymond, S.** Multiple analyses on a single gel-electrophoresis preparation, 459.
- Jordan, J.** See **Zamboni, P. G.**, 115.
- Jordan, R. L.** See **McKinney, R. W.**, 441, 2804.
- Jordan, W. J., jun.** Modified total serum cholesterol method for eliminating the effect of high bilirubin levels, 2049.
- Jork, H.** Quantitative evaluation of paper and thin layer chromatograms, 2. Direct quantitative TLC analysis, 3. Use of pre-coated glass plates and foils in TLC, 2782.
- See also **Stahl, E.**, 2780.
- Josefsson, E.** See **Appelqvist, L.-Å.**, 989.
- Joseph, J. D.** See **Collins, J. C.**, 2761.
- Joseph, P. T.** See **Geetha, S.**, 2960.
- Joshi, A. P., and Munshi, K. N.** Photometric determination of gallium, indium and thallium with Solochrome cyanine R, 1166.
- Joshi, M. P., and Gupta, C. M.** Electrometric determination of neodymium<sup>III</sup> as tungstate 2929.
- Joshi, N. D.** See **Shivhare, G. C.**, 2398.
- Jouret, C., and Benard, P.** Determination of zinc in wines by means of zincon, 977.
- Joy, W. K.** Time-of-flight mass spectrometry: review 1675.
- Jucker, H.** See **Suter, H.**, 1717.
- Juhl, I., and Waarst, V.** Determination of substances in tablets by thin-layer and column chromatography on silica gel, 1493.
- Juliano, B. O., Cartão, A. V., and Vidal, A. J.** Limitation of the starch-iodine blue test for milled rice amylose, 2708.
- Julietti, R. J.** Wet-chemical determinations of common impurities in alumina, 2913.
- Jungnickel, F.** Sensitive colour reactions for locating small amounts of phosphorus-containing compounds on paper chromatograms, 1409.
- Juo, P.-S., and Stotzky, G.** Interference by nitrate and nitrite in the determination of carbohydrates by anthrone, 300.
- Jurics, E. W.** Paper-chromatographic determination of catechin and epicatechin in fruits, 2179.
- See also **Szotyor, K. S.**, 951.
- Jurs, P. C., and Isenhour, T. L.** Binomial-distribution statistics applied to minimising activation analysis counting errors, 1713.
- Jursik, F., and Petrů, F.** Dependence on pH of the electrophoretic mobility of copper<sup>II</sup> chelates of amino-acids, 1455.
- Juul, P.** Assay of human-plasma cholinesterase isoenzymes, 2671.
- Južnič, K.** See **Senegačnik, M.**, 1600.

## K

- Kabushiki Kaisha Hitachi Seisakusho.** Apparatus for measuring the Raman effect of a substance 3322.
- Kácl, K.** See **Večerek, B.**, 2806, and **Večerková, J.**, 3137.
- Kaderavek, G.** Spectrofluorimetry of esterified of III. Isolation of the fluorescent substance, 981.

- Kadish, A. H., Little, R. L., and Sternberg, J. C. Determination of glucose by measurement of rate of oxygen consumption, 2614.
- Kadkol, S. B. Colorimetric determination of dichlorvos, 993.
- Kaess, A. See Mathis, C., 1491.
- Kagawa, M. Chemical analysis with *o*-diacetylbenzene. I. Compounds giving coloured products with this reagent, 8; II. Spectrophotometric determination of sulphanilamide and related compounds, 361.
- Kahan, J. TLC of vitamin-A metabolites in human serum and liver tissue, 900.
- Kahl, W., Melzacka, M., and Bojarski, J. Identification of the degradation products of some barbiturates by TLC, 926.
- Kahn, H. L., and Schallis, J. E. Determination of arsenic, selenium and other elements by atomic absorption with an argon-hydrogen flame, 2860.
- Kahsnitz, R., and Möhlmann, G. Potentiometric titration of strong and weak acids in mineral oils, 1366.
- Kai, F. Reaction between mercury<sup>II</sup> and organic compounds. III. Separation and determination of basic amino-acids with mercury<sup>II</sup> salt precipitants, 322.
- Kaindl, K. See Scherz, H., 2850.
- Kainz, G., and Kasler, F. Improved apparatus for the determination of primary amino-groups, 1911.
- and Wachberger, E. Micro-determination of carbon, hydrogen and nitrogen by thermal-conductivity measurement, 1297.
- and Zidek, K. Absorbents for nitric oxide in determination of primary amino-groups, 1909.
- and Zidek, K. Micro-determination of carbon and hydrogen in organic compounds by conductimetric determination of the combustion products, 1901.
- Kaise, M. See Yamamoto, O., 1734.
- Kaiser, F. E. See Gehrke, C. W., 2211.
- Kaiser, R. Reversion gas chromatography: determination of parts-per-billion of volatile material in gases, 3. Support-coated open-tubular glass capillary columns with optional stationary phases, 2791.
- Kaistha, K. K., and French, W. N. Selective determination of tolbutamide in pharmaceutical dosage forms by reaction with ninhydrin, 3234.
- Kajiyama, R., Watanabe, M., and Yamaguchi, Katsumasa. Studies of analytical methods for raw materials in the steel industry. VI. Volumetric determination of niobium in ferroniobium with 8-hydroxyquinoline, 155.
- and Yamaguchi, Katsumasa. Studies of analytical methods for raw materials in the steel industry. V. Determination of titanium in ferroniobium with diantipyrinylmethane, 155.
- Kakihana, H. See Ichikawa, T., 586.
- Kakolowicz, W. See Ingri, N., 531.
- Kalbus, G. E. See Kalbus, L. H., 572.
- Kalbus, L. H., and Kalbus, G. E. Potentiometric determination of silver with dithio-oxamide, 572.
- Kale, N. See Bhati, A., 3339.
- Kalinichenko, I. I. See Kotyaeva, K. A., 2967.
- Kalinina, M. V., and Surikova, E. I. TLC of oleandomycin on silica gel, 3211.
- Kalinovskaya, E. A., and Sil'vestrova, L. S. Photometric determination of chromium in organochromium complexes, 1949.
- Kalinowski, K., and Czlonkowski, F. Determination of phenoxymethylpenicillin with coulometrically generated iodine, 3208.
- Kallmann, S., Hobart, E. W., Oberth, H. K., and Brienza, W. C., jun. Determination of traces of nitrogen in refractory metals and alloys by hydrofluoric acid-phosphoric acid-potassium dichromate decomposition and indophenol photometry, 2422.
- See also Hobart, E. W., 40.
- Kaluza, G. A., and Martin, F. Behaviour of some pyrrole derivatives in gas chromatography, 753.
- Kaluzhskaya, I. N. See Sobolev, A. S., 1343.
- Kamada, H., Iwata, K., and Ogahara, I. Arc melting-gas-chromatographic determination of oxygen in metals, 1276.
- Ui, T., Kimoto, S., and Sato, M. Use of a primary X-ray analyser, 154.
- Kamaeva, G., Talipov, Sh. T., Dzhiyanbaeva, R. Kh., and Tashkhodzhaev, A. Absorptiometric determination of copper with certain anabasine-azodyes, 1142.
- Kamaeva, L. V., Stepin, V. V., and Makarov, M. K. Use of anionites in the determination of cobalt and nickel in Kovar alloy or cobalt ore, 3030.
- See also Verbitskaya, V. A., 1834.
- Kambara, T., and Tachikawa, T. Derivative method of detection in ion-exchange chromatography, 3315.
- See also Suzuki, T., 2475.
- Kambe, M., Shindo, F., and Morito, M. *p*-Nitrophenylhydrazones of 2-furaldehyde as indicators in the alkaline region, 537.
- Kamel, K. See Hoerman, K. C., 327.
- Kamenev, A. I. See Alimarin, I. P., 2384.
- Kamenschikov, S. V. See Mokhnachev, I. G., 1326.
- Kamin, G. J., O'Laughlin, J. W., and Banks, C. V. Separation and determination of zirconium in niobium by using methylenebis(dihexylphosphine oxide), 1218.
- Kaminska, A. See Kotula, Z., 2138.
- Kamm, L., Bray, D. F., and Coffin, D. E. Assessment of the 4-(1-naphthylazo)-1-naphthylamine determination of nitrate and nitrite, 2167.
- Kammori, O., and Inamoto, I. Square-wave polarographic determination of indium in iron and steel, 1270.
- Takahari, T., and Bando, Shyoji. Studies of the chemical analysis of trace impurities in pure iron. XX. Behaviour of trace amounts of impurities on extraction with isobutyl methyl ketone, 149.
- Yamaguchi, N., and Sato, Kimitaka. Application of i.r. spectrophotometry to the study of steel. I. Identification of metal oxides, 670. [Annual review, 1967]—Absorption spectrophotometry, 1734.
- Kamp, P. E. See Hermans, R. B., 1416.
- Kamp, W., and Oort, A. van. Separation and identification of some carbohydrates by TLC, 2513.
- Kampen, E. J. van. See Assendelft, O. W. van, 333.
- Kanagawa, H. See Kaneko, Hisamitsu, 1760.
- Kaneko, Hiroko. See Kaneko, K., 1164.
- Kaneko, Hisamitsu, Kanagawa, H., Kobayashi, H., and Ueno, Keihei. Application of zone-melting technique to metal-chelate systems. IV. Concentration of metal-8-hydroxyquinoline chelates in 8-hydroxyquinoline, 1760.
- Kobayashi, H., and Ueno, Keihei. Application of zone-melting technique to metal-chelate systems. II. Concentration of a trace amount of metal acetylacetonate in tris(acetylacetonato)-chromium<sup>III</sup>, 1854.



- Kaneko, K., Tatsuno, T., Kaneko, Hiroko, and Goseki, S. Spectrophotometric determination of yttrium or lanthanum in aluminium alloys with methylthymol blue after extraction of aluminium as the 8-hydroxyquinoline complex, 1164.
- Kangas, W. J. See Hockings, W. A., 1653.
- Kaniewska, T., and Borkowski, B. Detection and determination of alkaloids containing methylenedioxy-groups after separation by TLC, 2684.
- Kanty, J. See Grunca, M., 995.
- Kapantsyan, E. E. See Darbinyan, M. V., 2982.
- Kapišinská, V., and Gasparič, J. Determination of isobutene tetramer in t-octylated 4,4'-isopropylidenediphenol, 1386.
- and Mokrošová, H. Determination of benzophenone derivatives, 2534.
- Kapitsa, N. V. See Zhdanov, A. K., 1123, 1754.
- Kaplan, B. Ya., Revyakina, G. N., Rezakova, Kh. S., and Shiryayeva, O. A. Use of pulse polarography for the analysis of semiconductors of the  $A^{III}B^V$  type and their components, 2330.
- See also Belikova, T. E., 630.
- Kappus, G. See Brunnée, C., 194.
- Karaseva, A. D. See Ioffe, E. Sh., 1282.
- Karas-Gasperec, V. See Jandrić, Z., 365.
- Karavaeva, S. D., and Shokanov, A. K. Isolation of rhenium from solution by ion exchange and extraction, 1867.
- Karawya, M. S., and Wahba, S. K. Spectrophotometric determination of eugenol in oils of clove, allspice and bay, 1958.
- Karcher, D. See Adriaenssens, K., 2077.
- Karger, B. L., and Hartkopf, A. GSC separation of hydrocarbons at over 200° below their boiling-points by using water as stationary phase, 1914.
- Karlova, E. V. See Zarinskii, V. A., 1696.
- Karlsen, J., and Baerheim Svendsen, A. GLC of the monoterpene hydrocarbons of the volatile oil of separate needles and pieces of branches from *Juniperus communis* L., 1957.
- Baerheim Svendsen, A., and Waaler, T. Gas-chromatographic determination of water in tablets, 350.
- Karlsson, R. See Lindskoug, B., 489.
- Karmarkar, K. H. See Arnika, H. J., 1071.
- Karmen, A. Proportional counter for assaying carbon-14 and tritium in the effluent of a GLC column, 450.
- Karnaukhova, N. N. See Babko, A. K., 616.
- Karnik, M. N. See Athavale, V. T., 684.
- Karpenko, L. I. See Zakhariya, N. F., 1173.
- Karpov, O. N., Gakh, I. G., and Lysyak, V. T. Oxidimetric determination of quinol and 14-methoxyphenol when present together, 241.
- Karpov, V. L. See Lukhovitskii, V. I., 1030.
- Karr, C., jun. See Estep, P. A., 2488.
- Karst, A. See Kremkow, C., 1566.
- Karsulin, M. See Štepinac, M., 1687.
- Karyakina, Z. P. See Busev, A. I., 2983.
- Kasatkina, L. A. Potentiometric determination of iron in soil, 3263.
- and Shapiro, M. Ya. Titration of hypochlorite with copper<sup>II</sup>, 1253. Determination of iron with copper<sup>I</sup>, 3015.
- Kasberg, A. See Klesment, I., 1308.
- Kasha, H. See Stefanski, R. J., 1676.
- Kashiricheva, I. I. See Strukova, M. P., 1906.
- Kasiura, K., and Marzenko, Z. Concentration and photometric determination of impurities in high-purity zinc sulphide, 2899.
- and Sytniewska, Z. Spectrophotometric determination of nickel with 5-dimethylamino-2-(2-thiazolylazo)phenol, 3032.
- Kasler, F. Micro-analysis of methyl-group-bearing functional groups by nuclear magnetic resonance spectrometry, 708.
- See also Kainz, G., 1911.
- Kässner, B., and Angermann, W. Spectrophotometric determination of aluminium in high-purity copper with 8-hydroxyquinoline, 569.
- Kassowitzová, B. See Jäger, J., 3273.
- Kastorskaya, K. A. See Loginova, N. K., 1394.
- Kataev, G. A. See Otmakhova, Z. I., 2867.
- Katayama, M., and Funahashi, Saburo. Determination of ethanolamine in plant tissues as the dinitrophenyl derivative by cation-exchange-resin paper chromatography, 3160.
- Katchman, B. J., Murphy, J. P. F., Offner, K. M., and Fox, J. C. Measurement of total body haemoglobin by bloodless technique, 332.
- Kato, Kiyoishi. See Ichikawa, T., 586.
- Kato, Koichi. Alkalimetric titration of ammonium salts in mixed solvents, 100.
- Kato, Tatsuo. See Horton, B., 2054.
- Kato, Tetsuo. See Noda, K., 3174.
- Kato, Toyooki. See Ishimori, Tomitaro, 1734, and Oka, Y., 3039.
- Katyal, M. Flavones as analytical reagents: review, 1736.
- Katz, L. See Voynovich, I. A., 73.
- Katz, M. A., Tadjer, G., and Aufrecht, W. A. Direct micro-determination of lysergide by GLC, 1527.
- Kaufman, J. H. See Klein, B., 1994, 1995.
- Kaufmann, W. Volumetric determination of sodium, 559.
- Kaup, J. Determination of tocopherols in plants, 2664.
- Kaushal, R. See Paul, R. C., 1694.
- Kawaguchi, H. See Nakajima, T., 1734.
- Kawahara, F. K., Moore, R. L., and Gorman, R. W. Micro-analyses for fourteen chlorohydrocarbons in waste-water by TLC and GLC, 2233.
- Kawai, S., and Tamura, Z. GLC of catecholamines with dimethyl sulphoxide as an effective solvent for trimethylsilylation, 315.
- Kawamura, S. See Ishimori, Tomitaro, 1734.
- Kawano, Y. See Beckman, H. F., 1557.
- Kawase, A. Formazans as analytical reagents for metal ions. I. Synthesis and colour reactions, 1101.
- Kawashima, I. See Uchikawa, H., 1734.
- Kawashima, T., and Tanaka, Motoharu. Determination of sub-microgram amounts of selenium<sup>IV</sup> by means of the catalytic reduction of 1,4,6,11-tetra-azanaphthacene, 1850.
- Kay, H. L. Apparatus for dynamic TLC, 1049.
- and Warren, F. L. Determination of 17-oxosteroid sulphates in human plasma, 843.
- Kay, M. I. See Brown, R. A., 1358.
- Kaye, R. C., and Seager, H. Determination of particle size by dielectric measurement, 3369.
- Kaylor, W. H. See Gales, M. E., jun., 2757.
- Keay, G. R. Evaluation of gestogens in oral contraceptives, 2141.
- Keckes, M. B. See Beckman, H. F., 1557.
- Keefer, L. K. Magnesium hydroxide as a TLC adsorbent: separation of polycyclic hydrocarbons, 1351.
- Keiffer, R. See Paesold, G., 37.
- Keil, K. See Snetsinger, K. G., 1290.
- Keilhauer, H. See Landgraf, R., 3106.
- Kellemen-Küttel, I. See Varga, L., 2159.
- Keller, R. A. See Dichiaro, J. V., 3084, and Jones, W. J., 2257.
- Kelley, W. D. See Cohen, J. B., 3274.
- Kellgren, R. See Lindskoug, B., 489.



- Kelliher, J. M.** See **Brown, R. A.**, 1358.
- Kellner, M.** See **Riedl, W.**, 1565.
- Kellum, G. E., and Smith, R. C.** Determination of water in monomeric and short-chain organosilanol by a modified Karl Fischer titration method, 1341.
- and **Uglum, K. L.** Lithium aluminium dibutyl amide as an acid - base titrant for determination of silanols, 235.
- Kelly, H. C.** Consecutive titrimetric determination of boron and nitrogen in amine - borane adducts, 1905.
- Kelso, A. G.** See **Dunn, P.**, 2748.
- Kemeleva, N. G.** See **Songina, O. A.**, 1806.
- Kemula, W., and Strojek, J. W.** Conditions of controlled anodic stripping of metals from the hanging-mercury-drop electrode, 501.
- Kende, P.** Synchronous operation of mass spectrometer with a chemical reaction, 2837.
- Kenna, B. T.** See **Conrad, F. J.**, 779.
- Kerchersid, M. L.** See **Walter, J. P.**, 2742.
- Kerr, G. O.** See **Jeffery, P. G.**, 1192.
- Kesler, R. B.** Anion-exchange chromatography of carbohydrates, 265.
- Kesselring, P., and Gautschi, M.** Coaxial bridge with helical line sample holders as a nuclear quadrupole resonance detector, 484.
- Ketlinskii, V. A., and Mikhailova, E. N.** Determination of cytochrome oxidase in blood, 2112.
- Keutel, H. J.** See **Alfred, R. J.**, 2665.
- Keyworth, D. A.** See **Bremanis, E.**, 259, **Miller, M.**, 761, and **Swensen, R. F.**, 1918.
- Khadeev, V. A., and Kochergina, S. A.** Amperometric determination of thorium in the presence of other metal ions that form stable complexes with EDTA, 1809.
- Khalifa, H., and Ateya, B.** Applications involving the iodide ion. I. Potentiometric micro- and semi-micro determination of silver: analysis of binary and ternary mixtures, 1149.
- and **Khater, M. M.** Back-titration with mercuric nitrate in hexamine-buffered media: determination of alkaline-earth and some heavy metals and analysis of quaternary mixtures, 549.
- See also **Alian, A.**, 2858, 2975.
- Khan, Mohammad A., and Morris, D. F. C.** Application of solvent extraction to the refining of precious metals. II. Purification of ruthenium, 1882.
- Khan, Mohammad A., Zaidi, S. S. H., Parveen, S., and Ahmad, N.** Determination of methyl groups attached to nitrogen by a modified Herzig-Meyer method with use of vapour-phase infrared spectrophotometry, 2501.
- Khan, Mukhtar A.** See **Qureshi, M.**, 19.
- Khan, M. A. S.** See **Salam Khan, M. A.**
- Kharchenko, R. S.** See **Pyatnitskii, I. V.**, 3017.
- Khariton, Kh. Sh., Kuz'minov, V. I., Shamshurin, A. A., Filippov, M. P., and Krivoshechekova, O. E.** Infra-red spectrophotometric determination of diethyl carbonate in diethyl oxydifomate, 2520.
- Kharkover, M. Z., and Barkovskii, V. F.** Successive extraction - absorptometric determination of copper, iron and manganese in aluminium, 1162.
- **Studenskaya, L. S., and Korshunova, L. P.** Determination of copper in aluminium and zinc with di-8-quinolyl disulphide, 1143.
- and **Vorozhbitskaya, K. F.** Extractive concentration of traces of zinc in aluminium, 1163.
- See also **Kruglova, M. N.**, 1165.
- Kharlamov, I. P.** See **Busev, A. I.**, 4.
- Khasan, M. Z., and Sevryukov, N. N.** Determination of lanthanides by displacement of metals that are readily determinable by polarography, 79.
- Khater, M. M.** See **Khalifa, H.**, 549.
- Khintbidze, L. S.** See **Busev, A. I.**, 65, 585.
- Khlopina, T. N.** See **Aleksandrak, V. M.**, 1670.
- Khmel'nitskii, R. A.** See **Polyakova, A. A.**, 1953.
- Khodzhaev, G. Kh.** See **Osipova, M. I.**, 3082.
- Khopkar, S. M.** See **Rangnekar, A. V.**, 174, 618, and **Shinde, V. M.**, 7.
- Khoury, A. J., and Cali, L. J.** Automated determination of ethinyloestradiol in pharmaceutical preparations, 939.
- Khovyakova, R. F., Blokhin, V. E., Zhuikova, L. K., and Marenkova, I. N.** Formazan I as reagent for determination of zirconium, 2964.
- Khudyakova, T. A.** Conductimetric analysis of mixtures of sulphuric acid with different acids in aqueous solutions, 696.
- and **Kreshkov, A. P.** Conductimetric titration of mixtures of strong, weak and very weak acids in aqueous media, 2517.
- Khvostova, V. P., Shlenskaya, V. I., and Godlevskii, M. N.** Determination of small amounts of platinum metals in ultrabasic and basic platinum-bearing rocks, 1286.
- Kidder, G. W., and Dewey, V. C.** Effect of initial solvent on hydrazone mobility in TLC, 1054.
- See also **Dewey, V. C.**, 1470.
- Kiermeier, F., Wildbrett, G., and Rudolphi, M.** Shortened extraction process for insecticides in milk products, 390.
- Kiesel, W.** See **Schaudy, R.**, 178.
- Kiesvaar, M., Nikkilä, O. E., and Westergren, K.** GLC for determination of the rancidity of herring oil, 1574.
- Kikuchi, S.** See **Yamamoto, Y.**, 66.
- Kilburn, D. S.** See **Flynn, D. S.**, 2843.
- Kilgariff, M., and Owen, J. A.** Assessment of the 'average of normals' quality-control method, 2586.
- Kilgore, W. W., and White, E. R.** Determination of captafol residues in fruits by electron-capture GLC, 959.
- **Winterlin, W., and White, E. R.** Determination of captan residues by GLC, 957.
- Kilzer, F. J., and Martin, S. B.** Simple micro-cell for photometric monitoring of flowing liquid materials, 1088.
- Kim, J.-S., and Tuckerman, M. M.** Determination of calcium in official calcium phosphates, 364.
- Kim, S. N.** See **Vetter, A. F.**, 1919.
- Kimberlin, J.** See **Wassen, J. T.**, 190.
- Kimoto, S.** See **Kamada, H.**, 154.
- Kinard, W. F., Philip, R. H., and Propst, R. C.** Analytical applications of Kalousek polarography, 496.
- Kind, H.** See **Verheyden, L.**, 2770.
- Kindlik, T.** See **Wisniewski, W.**, 3221.
- King, H. G. C., Pruden, G., and Janes, N. F.** Synthesis of the active component of commercial Titan yellow for use in the determination of magnesium, 574.
- King, P.** See **Kneip, T. J.**, 389.
- King, R. E.** Progress reports: analytical chemistry, 2326.
- Kingston, P. W.** See **Van Loon, J. C.**, 2991.
- Kinnaman, M. L.** See **Johnson, H. A.**, 1081.
- Kinnunen, J., and Lindsjö, O.** Determination of rare-earth elements in phosphate rock by atomic-absorption photometry. II, 102.

- Kinoshita, K., Isurugi, K., Matsumoto, Y., and Takayasu, H. Gas-chromatographic determination of urinary pregn-5-ene-3 $\beta$ ,17 $\alpha$ ,20 $\alpha$ -triol, 3151.
- Kircher, H. W. Operation of an inexpensive, unbreakable chromatographic column, 2254.
- See also Jacks, T. J., 910.
- Kirillov, A. I., Lauér, R. S., and Poluéktov, N. S. Extraction-fluorimetric determination of yttrium in lanthanum salts by means of 5,7-dibromo-8-hydroxyquinoline, 2926.
- and Poluéktov, N. S. Spectrophotometric determination of cerium<sup>III</sup> in solutions of its complexes with ethylenediaminetetra-acetic or nitrilotriacetic acid, 2402.
- See also Poluéktov, N. S., 82.
- Kirillova, R. P., Sedlenskiĭ, K. V., and Belova, O. S. Phase analysis of titanium alloys, 622.
- Kirillova, T. V. See Terent'ev, A. P., 2500.
- Kirin, I. S., and Zaitsev, V. M. Paper-chromatographic separation of polonium from tellurium, 2998.
- Kiriya, T. See Kuroda, R., 2905.
- Kirk, J. T. O. Determination of the base composition of DNA by measurement of the adenine-guanine ratio, 1472.
- Kirkbright, G. F., Semb, A., and West, T. S. Separated nitrous oxide-acetylene flame as an atom reservoir in thermal emission spectroscopy. [I.] 3329; [III.] Detection limits for thermal emission spectroscopy in a separated nitrous oxide-acetylene flame, 3329.
- See also Hingle, D. N., 1157, 2861.
- Kirkland, J. J. High-performance u.v. photometric detector for use with efficient liquid-chromatographic columns, 2777.
- Kirkland, S. See Jasinski, R. J., 254.
- Kirowa-Eisner, E., Golombek, A., and Ariel, M. Potentiometric indicating system: twin electrodes at zero current. II. Choice of electrodes, 2320.
- Kirpichev, V. P., and Yakubchik, A. I. Spectrophotometric determination of aromatic amino-groups in polymeric antioxidants for, e.g., rubber, 274.
- Kirsch, W. M., Leitner, J. W., and Schulz, D. Assay for organic-phosphorus fractions in microgram quantities of tissue, 289.
- Kiseleva, M. S. See Neporent, B. S., 483.
- Kiso, Y. See Ishimori, Tomitaro, 1734.
- Kiss, E. Determination of some major constituents in rocks and minerals, 689.
- Kitano, S. See Iritani, N., 1532.
- Kitano, Y., Ishibashi, W., and Sato, S. Separation of niobium from tantalum with a high-molecular-weight amine and its spectrophotometric determination with phenylfluorone in isobutyl methyl ketone, 114.
- Kitt, G. P. See Cuninghame, J. G., 26.
- Kittinger, G. W. GLC of adrenal cortical steroids, 3153.
- Klassova, N. S. Complexometric determination of aluminium in small samples of minerals and rocks, 72.
- Klatyk, K. See Halpaap, H., 2, 3.
- Kleber, H. Detection of uranium in ethyl ether medium and fluorimetric spot test for uranium in aqueous solution, 2405.
- Kleczyńska, M. See Gielczewska, H., 1881, 2470.
- Kleeman, A. W. Sampling error in the chemical analysis of rocks, 176.
- Kleihauer, E. F. See Dozy, A. M., 3180.
- Kleiman, R. See Tallent, W. H., 2629.
- Klein, B., and Kaufman, J. H. Automated atomic-absorption spectrophotometry. IV. Simultaneous determination of calcium and phosphorus, 1995.
- Kaufman, J. H., and Isaacs, J. Automated simultaneous determination of calcium and phosphorus, 1994.
- Klein, K. See Adams, O., 1665, and Verheyden, L., 2770.
- Klein, M. P., and Dratz, E. A. Derivative spectroscopy with recording spectrometers, 3331.
- Klein, R. W. See Gruber, M. P., 943.
- Kleinman, M. T. See Bogen, D. C., 369.
- Klein-Wisenberg, A. von, and Boroviczény, K. G. von. Standardisation of photometry exemplified by haemoglobinometry, 1087.
- Klempin, U. See Brummer, J.-M., 2710.
- Klera, M., and Dudzik, Z. Determination of ephedrine, aminophylline and ethylmorphine in compound powders, 2134.
- Klesment, I. Hydrogenation and dehydrogenation of substances separated by GLC in a two-component carrier gas: determination of the concentration of reactive gases, 1310.
- and Kasberg, A. Determination of alkoxy-groups in phenolic ethers separated by GLC, 1308.
- Klewska, A., and Strycharska, M. Application of zinc dibenzylthiocarbamate to the determination of traces of copper in biological material, 798.
- Klibus, A. Kh. See Pyatnitskiĭ, I. V., 498.
- Klier, E. Production of monochromatic radiation with spectral lamps, 2286.
- Klimczak, H. See Gajek, O., 2706.
- Klimeck, B. A. See Howard, J. W., 2170.
- Klimova, V. A., Sherman, F. B., and L'vov, A. M. Micro-determination of water with Karl Fischer reagent prepared with dimethylformamide instead of methanol, 1893. Universal titrimetric micro-determination of water with Karl Fischer reagent, 1894.
- See also Anisimova, G. F., 1295.
- Klinenberg, J. R., Goldfinger, S., Bradley, K. H., and Seegmiller, J. E. Enzymic spectrophotometric determination of xanthine and hypoxanthine, 336.
- Klingström, A. Growth-regulating substance from *Pinus silvestris* separated on Sephadex LH-20, 793.
- Klockow, D. See Weisz, H., 571.
- Klotsch, S. See Marymont, J. H., 3159.
- Klotz, M. R. See Firsching, F. H., 1799.
- Klug, O. N., and Metlenko, A. I. Determination of small amounts of molybdenum in vanadium and vanadates, 2987.
- Klusal, I. Determination of non-metallic elements in uranium and its compounds and alloys, 609.
- Klutch, A., and Bordon, M. Determination of 4'-t-butoxyacetanilide by GLC, 2013. Chromatographic analysis of the metabolites of phenacetin, 3135.
- Klyachko, Yu. A. See Busev, A. I., 4.
- Knaape, J. See Engelsman, J. J., 2935.
- Knappe, E., and Rohdewald, I. Detection of cyclic dicarboxylic acid anhydrides by TLC of the products of their reaction with *p*-anisidine, 727.
- Knauff, R. E., and Adams, J. A. Determination of the major proteins and mucoproteins in the duodenal fluids of cystic fibrosis and control subjects, 2084.
- Knecht, L. A. Oxidation of cerium<sup>III</sup> to cerium<sup>IV</sup> by a mixture of hot concentrated perchloric and sulphuric acids, 603.



- Kneip, T. J., Beasley, T. H., King, P., and Dean, W. K. Programmed-temperature GLC with dual electron-capture detectors for pesticide residue analysis, 389.
- Knevel, A. M. See Charles, R., 2597.
- Knight, H. S. GLC determination of normal paraffins in kerosene, 256.
- Knight, N. H. See Osolinski, T. W., 173.
- Knight, S. A. Analysis of aromatic petroleum fractions by absorption-mode carbon-13 spectroscopy, 763.
- Knockaert, O. E., Maes, G. L., and Faes, M. H. Polarographic simultaneous determination of lead and cadmium in urine, 2002.
- Knott, L. See Rubin, M., 2063.
- Ko, R. Static extraction technique, 1620.
- Kobatake, T. See Tōei, K., 1006.
- Kobayashi, H. See Kaneko, Hisamitsu, 1760, 1854.
- Kobayashi, T. See Yamamoto, Y., 1551.
- Kobayashi, Y., and Meguro, T. Detector tube for rapid micro-determination of phosphine in air, 1594.
- Kobisch, W. See Bertram, F., 752.
- Koch, O. G., and Reinhard, R. Gas analysis with a small mass spectrometer. I. Determination of small amounts of carbon monoxide, nitrogen and hydrogen in argon and helium, 38.
- Koch, W., and Lemm, H. Determination of oxygen and nitrogen in steel by the helium carrier-gas method, 1278.
- Kochergina, S. A. See Khadeev, V. A., 1809.
- Kocheva, L. L., and Koleva, E. Ion-exchange separation of indium from accompanying elements: separation from cadmium and aluminium, 2919.
- Kodama, T., Samejima, M., Amano, F., and Utsumi, I. Spectrophotometric determination and physicochemical properties of *N*-(3,5-dihydroxy-4,4-dimethylvaleryl)- $\beta$ -alanine, 2103.
- Ködding, R., and Krüskemper, H. L. Determination of non-labelled thyroid hormones and iodotyrosines in the presence of iodine-containing X-ray contrast media, 3178.
- Koehler, W. R. See Blum, J., 2560.
- Koen, V., and Ruseva, N. Paper-chromatographic and spectrophotometric determination of thiamine and pyridoxine in the presence of ascorbic acid, rutin and procaine, 3212.
- Kogol', I. M. See Salin, A. A., 1697.
- Kogure, Y. See Morita, Y., 1335.
- Kohler, G. O., and Palter, R. Amino-acid analysis of wheat products, 396.
- Köhler, M., and Eichhoff, H.-J. Determination of polycyclic aromatic hydrocarbons in atmospheric dust, 1003.
- Köhler, P. See Alter, J., 1587.
- Köhler, U. See Uhde, W.-J., 271.
- Kohn, D. H. See Ratner, R., 2877.
- Kohn, J. Multi-sample applicator for zone electrophoresis, 457.
- Köhne, H. See Poethke, H., 768.
- Koka, P. A. See Bazhov, A. S., 564, 2819.
- Kokk, Kh. Yu. See Aleskovskii, V. B., 2902.
- Kokot, Z. See Jasiński, T., 3083.
- Kolar, M. A. See Hauser, T. R., 1767.
- Kolbe, K. See Johnsen, U., 1390.
- Kolbezen, M. J. See Day, E. W., jun., 2191.
- Kolbig, C. See Zimmermann, Heinz, 1388.
- Kolchina, K. E. Determination of traces of arsenic in semiconductor materials, in the presence of indium, by a.c. polarography, 2973.
- Kolchina, N. A. See Kreshkov, A. P., 1208.
- Koldobskii, R. B. See Sokolov, A. G., 2510.
- Kolechkova, A. F. See Ostanina, N. M., 1191.
- Koleva, E. See Kocheva, L. L., 2919.
- Kolinský, M. See Litomiský, J., 612.
- Kollar and El Kouri. Comparative study of rotating micro-electrodes in electrochemical analysis: application to determination of ruthenium in catalysts, 1883.
- Kolman, Z. See Michalec, Č., 1441.
- Kolthoff, I. M., Chantooni, M. K., jun., and Bhowmik, S. Titration of bases in acetonitrile, 196.
- Komarova, K. A. See Kreshkov, A. P., 98.
- Komatsu, Sadakichi, and Hagino, K. Spectrophotometric determination of traces of nitrate by a reduction with zinc and spectrophotometry with Griess - Romijn reagent, 1202.
- Komatsu, Sumio, Nomura, Toshiaki, and Usui, Y. Indirect spectrophotometric determination of iodide with silver diethyldithiocarbamate, 1256.
- Kondakova, G. K. See Busev, A. I., 1866.
- Kondrashina, A. I. See Vasilevskaya, L. S., 2953.
- Kondratov, V. K., and Novikov, E. G. Titration of pyridyl-substituted ureas as bases and as acids in non-aqueous media, 2545.
- Konečný, J., Tölgyessy, J., and Šaršunová, M. Radio-complexometric determination of cyanocobalamin, 925.
- Konečný, V. See Hrivniák, J., 1338.
- König, H. Separation, detection and determination of aerosol propellants by GLC, 790.
- König, P. See Dickens, P., 666.
- Königsbuch, J. See Foa, E., 508.
- Königstein, J. See Fedoroiiko, M., 2515.
- Konkin, V. D. See Tolmachev, V. N., 1199.
- Kon'kova, I. V. See Volodina, M. A., 1932.
- Konovalov, E. E. See Malikova, E. D., 2880.
- Kontinen, A. Determination of ornithine carbamoyltransferase activity in serum, 907.
- Koons, J. R., and Scroggs, R. E. GLC determination of chlormadinone acetate in feeds and pre-mixes, 1580.
- Kopanskaya, L. S., Arzhintar', O. A., and Lyalikov, Yu. S. Oscillopolarographic determination of gallium in semiconductor alloys, 2387.
- See also Lyalikov, Yu. S., 1119.
- Kopecký, A. Evaluation of the rancidity of the fat of freeze-dried meat by means of the thiobarbituric acid value, 2174.
- Kopnina, O. I. See Tiptsova, V. G., 1789.
- Kopp, J. F., and Kroner, R. C. Determination of trace elements in water by emission spectrography, 418.
- Kopřiva, B. See Veselková, D., 2516.
- Korczak-Fabrierkiewicz, C., Robinson, D. W., and Lucas, G. H. W. Conversion of chlorpromazine sulphoxide into chlorpromazine by use of metals in acid solution, 1417.
- Korenman, I. M., Sheyanova, F. R., and Zimina, G. M. Turbidity indicators for neutralisation titrations, 2852.
- Korkisch, J., and Huber, A. Cation-exchange behaviour of several elements in hydrofluoric acid - organic solvent media, 1744.
- See also Cummings, T., 34.
- Kormicki, J., and Mikolajek, E. Complexometric determination of calcium in drugs with radio-active silver as indicator, 2678.
- Korol', A. N. See Kryukov, A. I., 2507.
- Korolev, A. A. See Alishoev, V. R., 1395.
- Korolev, V. E. See Malyukov, B. A., 1194.
- Koroleva, V. S. See Shaposhnikov, Yu. K., 1377.
- Korotkova, T. N. See Chelnokova, M. N., 3068.
- Korovina, A. G. See Ustinova, V. I., 2999.
- Korshunova, L. P. See Kharkover, M. Z., 1143.



- Korthoven, P. J. M., Wechter, M. A., and Voigt, A. F. Determination of gadolinium and europium in their tungsten bronzes by high-energy photon activation and computer resolution of gamma-ray spectra, 131.
- Korytnyk, W. See Dejongh, D. C., 3186.
- Kosenko, M. S. See Bludov, V. D., 599.
- Kosenko, N. N., Baranova, G. F., and Turvich, S. M. Analysis of flotation reagent OPSM by GLC, 3063.
- Koshiba, K. See Nozaki, T., 1840.
- Kosikhina, G. I. See Patsuk, V. V., 1231.
- Köster, M. See Bensch, H., 1160.
- Köster-Pflugmacher, A. See Schlünz, M., 205, 2476.
- Kostova, R. V. See Zharovskii, F. G., 2857.
- Kotarski, A. See Gruca, M., 995.
- Kotik, F. I., and Kutneva, E. R. Volumetric determination, with nitchromazo as indicator, of sulphate in copper-plating electrolytes containing ethylenediamine, 1778.
- Kotin, P. See Fishbein, L., 2850.
- Kotova, V. N. See Strukova, M. P., 2499.
- Kotowski, W., and Paterok, N. GLC of the products of carbon monoxide hydrogenation with alkalis cupric oxide-zinc oxide-aluminium oxide catalyst, 3058.
- Kottong, G. W. See Rebertus, R. L., 1333.
- Kotula, Z., and Kaminska, A. Application of paper electrophoresis and TLC on talc for determining erythromycins, 2138.
- Kotyayeva, K. A., Kalinichenko, I. I., and Ovcharenko, V. I. Potentiometric determination of sulphamate in aqueous solutions of salts, 2967.
- Kováč, J. See Dulák, K., 1582.
- Kovach, J. J. See Estep, P. A., 2488.
- Kovács, A. See Varga, L., 2159.
- Koval'chuk, V. A. See Shakhova, Z. F., 1828.
- Kovalenko, P. N. See Shcherbak, I. F., 1989.
- Kovaleva, E. I. See Vinarov, I. V., 2420.
- Kovářík, M. See Mayer, V., 2472.
- Kovner, V. Ya., Adorova, I. V., and Siling, M. I. Photometric determination of *o*-hydroxybenzyl alcohol and 4,4'-methylenediphenol on paper and thin-layer chromatograms, 2580.
- See also Adorova, I. V., 2577.
- Kovtunen, P. V. See Filippov, S. N., 2373.
- Kovtunov, V. S. See Mokhnachev, I. G., 1326.
- Kowalczyk, M. See Goszczyńska, H., 620.
- Kowalewski, Z. See Lutomski, J., 3206.
- Kowalski, Zdzisław. See Parus, J., 3353.
- Kowalski, Zygmunt, and Zarebski, J. Determination of iron and titanium present together in raw materials and ceramics by constant-current polarography, 693. Simultaneous determination of iron and titanium in raw materials and ceramics by a.c. polarography, 3045.
- Kozhevnikova, I. A. See Gusev, S. I., 2416.
- Kozina, G. V. See Busev, A. I., 2380.
- Kozlicka, M., and Kubica, M. Direct colorimetric determination of magnesium in nickel, 675.
- Kozlova, A. F. See Belova, G. A., 3076.
- Kozyreva, É. A. See Negina, V. R., 2907.
- Kráčmar, J. See Blažek, J., 1519, and Rosenbergerová, D., 1526.
- Krajina, A., and Doležal, J. Application of thermoelectric potential measurements in chemical analysis. II. Determination of aluminium in iron alloys, 1872.
- Kram, T. C. See Turczan, J. W., 2148.
- Kramer, D. A. See Honig, R. E., 1674.
- Kramer, D. N. See Seip, W. F., 920.
- Kramlová, M. See Přistoupil, T. I., 3184.
- Krampl, V. See Bondarovich, H. A., 963.
- Krankowsky, D., and Müller, O. Isotopic composition and abundance of lithium in meteoritic matter, 179.
- Krapivkina, T. A. See Brainina, Kh. Z., 3028.
- Krasnee, L'. See Šaršunová, M., 3192, and Stuchlík, M., 751.
- Krasznai, I., Somorjai, Z., and Tóth, Z. Qualitative test for *o*-aminophenol in chlorquinaldol with 2,4-dinitrobenzenediazonium fluoroborate, 1521.
- Kratochvil, B., and Zatko, D. A. Oxidation of some arylamines by copper<sup>II</sup> in acetonitrile, 2539.
- Kratzer, K. See Starý, J., 1761.
- Krauss, G. See Kremkow, C., 976.
- Krauss, O. See Scheer, K. E., 1426.
- Kraut, H., and Imhoff, U. Determination of vitamin B<sub>6</sub> and its components in body fluids and in foods, 2009.
- Kray, L.-R. See Duffield, A.-M., 2693.
- Kreimer, S. E., Mikhailov, P. M., and Lomekhov, A. S. Spectrographic determination of gold after chemical enrichment, 1783.
- Krein, G. See Benk, E., 1095.
- Kreingol'd, S. U., and Bozhevol'nov, E. A. Kinetic determination of copper, iron, cobalt and manganese in high-purity germanium tetrachloride and trichlorosilane, 2415.
- Bozhevol'nov, E. A., and Antonov, V. N. Photometric determination of 0.1 to 10 p.p.m. of iron in salts by means of the catalysed oxidation of 4-amino-5-hydroxynaphthalene-2,7-disulphonic acid, 3016.
- Krejčí, M. See Dressler, M., 1060, 1637.
- Kremkow, C., and Karst, A. Determination of coagulable nitrogen in wort and beer, 1566.
- and Krauss, G. Evaluation of malt composition in relation to beer colour, 976.
- Kreshkov, A. P., Bork, V. A., and Fedukhina, G. P. Determination of cadmium in the presence of zinc, copper, nickel, calcium, barium, bismuth and magnesium by amperometric titration with potassium bromide in anhydrous acetic acid, 2900.
- Bork, V. A., and Sal'nikova, K. S. Use of a rotating amalgamated-copper cathode in the amperometric titration, in anhydrous acetic acid medium, of chloride and bromide and their mixtures, 3008.
- Drozdov, V. A., and Kolchina, N. A. Titration of phosphorus-containing acids in media of ethyl methyl ketone, *t*-butyl alcohol and pyridine, 1208.
- and Kuznetsov, V. V. Photometric determination of strontium with nitchromazo in barium salts in a mixed solvent medium, 2372.
- and Kuznetsova, L. B. Potentiometric titration method for analysis of phosphates in non-aqueous medium, 1835.
- Yarovenko, A. N., and Komarova, K. A. Determination of nitrite and nitrate, in mixtures with other salts or acids, with use of non-aqueous solvents, 98.
- See also Khudyakova, T. A., 2571.
- Kretzschmann, F., and Engst, R. Photometric determination of bromide in foods and feeding-stuffs treated with bromomethane, 2168.
- Krichevsky, M. I., Zaveler, S. A., and Bulkeley, J. Computer-aided single- or dual-isotope channels-ratio quench correction in liquid-scintillation counting, 351.
- Krinberg, I. A., and Smirnova, E. V. Calculation of errors in spectrographic determination of cerium, 2821.
- Krinit'syna, N. A. See Rud'ko, B. F., 1130.

- Krishnamoorthy, T. M., and Viswanathan, R. Precipitation studies in the determination of cobalt in sea-water, 3280.
- Krishnan, R. S. See Witting, L. A., 2626.
- Krishnan, V. R. See Santhanam, K. S. V., and Sivaramaiah, G., 1348, 3073.
- Krishnaswamy, N. Synthetic ion-exchange membranes, 1075.
- Kriulin, A. V. See Bur'ykina, S. I., 2940.
- Kriřán, V. Fundamentals of the analytical application of  $\beta$ -ray back-scattering, 3552.
- Krivoshchekova, A. E. See Khariton, Kh. Sh., 2520.
- Kröller, E. Detection of nitrosamines in tobacco smoke and foods, 855. Determination of residues of phosphine in foods, 2722. Identification of emulsifiers in foodstuffs, VII, 3251.
- Krone, H. See Beckey, H. D., 2831.
- Kroneisen, A. See Halász, I., 2775, 2776.
- Kroner, R. C. See Kopp, J. F., 418.
- Kropivnitskaya, R. A., and Pogossyan, É. T. Coulometric bromimetric titration of vinyl acetate in an aqueous dispersion of poly(vinyl acetate), 3110.
- Kroshkina, A. B., and Chernikova, S. M. Phase analysis of tantalum - niobium ores, 635.
- Krotenko, A. P. See Bliznyukova, V. A., 2894.
- Krowicki, K. See Banaszek, A., 3209.
- Křil, J. Composition of vanadyl hexacyanoferrate<sup>II</sup> precipitated in the presence of alkali metals or ammonium ions, 1215. Analysis of difficultly soluble hexacyanoferrates<sup>II</sup> and hexacyanocobaltates<sup>III</sup>, 1870.
- Krueger, W. See Scallen, T. J., 2632.
- Krüger, E. See Silbereisen, K., 966.
- Krüger, H. See Jentzsch, D., 3.
- Krüger, R. See Pastuska, G., 3.
- Kruglova, M. N. Determination of arsenic in antimony or chromium, 1209.
- Studenskaya, L. S., and Kharkover, M. Z. Determination of manganese in metallic aluminium, 1165.
- Krumlová, L. See Buděšínský, B., 637.
- Krupnick, A. C. See Putscher, R. E., 15.
- Kruse, G. See Bendel, E., 1312.
- Křuskemper, H. L. See Ködding, R., 3178.
- Křutetzsch, J. Gas-flow meter for laboratories, 3287.
- Křylova, E. P. See Anisimova, G. F., 1295.
- Kryman, F. J. See Jellinek, H. H. G., 2223.
- Křysina, L. S. See Busev, A. I., 1888.
- Křysmann, W. See Wirsig, M., 565.
- Kryukov, A. I., Ivanitskaya, S. A., Mishchenko, V. A., and Korol', A. N. Identification of photochemical oxidation products of hexene by GLC, 2507.
- Křzczkowska, I. See Szczepaniak, S., 3163.
- Křubalski, J., Lisowski, Z., and Brzezińska-Drygienieć, D. Potentiometric determination of tartaric acid in effervescent tablets, 2164.
- Křubán, V. See Sommer, L., 1786.
- Křubecová, V. See Janák, J., 2.
- Křubeczka, K.-H. Apparatus for isolation, concentration and characterisation of microgram amounts of compounds separated by gas chromatography, 1645.
- Křubiak, E. J. Determination of terpin hydrate by GLC, 3235.
- Křubica, M. See Kořlicka, M., 675, and Wójtowicz, M., 3035.
- Křubin, M., Špaček, P., and Chřomeček, R. Gel-permeation chromatography on porous poly-(ethanediol methacrylate), 1626.
- Křubo, S. [Annual review, 1967]—Foods, 1734.
- Kubota, H. Rapid distillation separation of microgram quantities of fluoride, 1247. Production of chlorine by gamma radiolysis of acid chloride solutions and its effect on analytical procedures, 2333.
- Kučera, M. See Challen, S. B., 1379, 1963.
- Kučerová, M. See Slávik, I., 1965.
- Kucharska, M. See Lutomski, J., 3206.
- Kucherov, V. F. See Paukov, V. N., 1956.
- Kuck, J. G. de, Macchi, R. A., and Crespo, F. Determination of glycerol and 1,2-isopropylidene-glycerol, 2203.
- Kudo, T. See Nambara, T., 842, 1443.
- Kudryavtsev, V. N., Balakin, Yu. P., Vagramyan, A. T., and Lyakhov, B. F. Determination of hydrogen absorbed in steel during electrochemical treatment, 2465.
- Kudryavtseva, N. A., and Shechpanova, A. I. GLC determination of light components in petroleum and petrol, 2551.
- Kugler, G. C. See Rechnitz, G. A., 1683.
- Kuhn, L. Semiconductor detectors: review, 3347.
- Kühn, W. Non-dispersive X-ray fluorescence spectroscopy with radio-nuclides. I, 3317.
- Kuhn, W. F. See Jones, R. M., 1986.
- Kuhnert-Brandstätter, M., and Grimm, H. Distinction of solvent-containing pseudopolymorphic crystal forms of steroid hormones from polymorphic modifications. I, 2139; II, 2139.
- and Müller, L. Effect of protective environments on determination of melting temperatures of decomposable materials, 3367.
- Kukreja, V. P. See Bhuchar, V. M., 677.
- Kulev, I. I., and Speranskaya, E. F. Electrochemical reduction of tungsten<sup>VI</sup> in the presence of oxalic acid, 3006.
- Kuleva, Z. P. See Lyalikov, Yu. S., 1119.
- Kulicka, J., Baranowski, R., Gregorowicz, Z., and Kulicki, Z. TLC analysis of the oxidation products of 1,2,4-trimethylbenzene, 3100.
- Kulicki, Z. See Kulicka, J., 3100.
- Kul'nevich, V. G. See Badovskaya, L. A., 2509, and Soltovets, G. N., 3088.
- Kumamaru, T. See Yamamoto, Yuroku, 66, 240, 244, 1551.
- Kumar, S., Pullan, B. R., Schwarz, V., and Simpson, N. I. M. Two simple methods of sequentially washing chromatographic columns, 1041.
- Kunsman, C. E. See Lund, E. D., 1628.
- Kunz, D. See Rosmus, P., 211.
- Kunz, H. W., Bernard, C. F., and Gill, T. J., III. Automated chromatographic analysis of the dinitrophenylene and dinitrophenyl derivatives of lysine and tyrosine, 3169.
- Kunze, F. M., Barkan, S., and Banes, D. Assay of *Rauwolfia serpentina*, 1.
- Kunze, J. See Friedrich, F., 2449.
- Kuo, J. See Hanok, A., 1987.
- Kupec, J. See Sevcik, S., 2773.
- Kupier, S. See Hirsch, C., 806.
- Kurayuki, Y., and Kusumoto, K. Detection of mercury<sup>II</sup> compounds on ion-exchange paper, 67.
- Kurbatov, D. I. See Volodina, V. I., 3112.
- Kurbatova, G. T. See Pilipenko, A. T., 1874.
- Kurbatova, V. I. See Barbash, T. L., 1271, Fedorova, N. D., 1757, Makogonova, L. N., 1219, and Stashkova, N. V., 1220, 1221.
- Kurenkov, V. F. See Myagchenkov, V. A., 2574.
- Kurepa, G. A. See Gusev, S. I., 593.
- Kurihara, N. See Ueno, T., 305.
- Kurilovich, T. I. See Vyřotskaya, V. N., 2945.
- Kurlansk, L., and Salim, E. F. GLC study of resorcinol monoacetate, 3229.



- Kuroda, K., Hashizume, G., and Fukuda, K. Quantitative analysis of pharmaceutical preparations by X-ray diffractometry. VI. Analysis of vaginal tablets, 940; VII. Quantitative analysis of suspensions by an internal-standard method, 940; VIII. Direct quantitative analysis of oral suspensions of sulphadiazine, 2699.
- Kuroda, P. K. See Clark, R. S., 189.
- Kuroda, R., Kiriya, T., and Ishida, K. Specific method for the separation of mercury<sup>II</sup> by using a weakly basic cellulose ion exchanger, 2905.
- Kuroh, T. See Hattori, T., 1734.
- Kurokawa, K. Anion-exchange separation of calcium, strontium and barium from each other with mixed solvents, 1153.
- Kurov, V. I. See Evstratova, K. I., 2522.
- Kusumoto, K. See Kurayuki, Y., 67.
- Kuteinikov, A. F., and Lysenko, S. A. Complexometric determination of niobium, 2989.
- Kutli, J. See Skála, O., 1671.
- Kutueva, E. R. See Kotik, F. I., 1778.
- Kuvaev, B. E., and Imyanitov, N. S. Determination of C<sub>2</sub> to C<sub>7</sub> straight-chain monobasic and C<sub>2</sub> to C<sub>9</sub>  $\alpha,\omega$ -dibasic acids by paper chromatography, 724.
- Kuwana, T. See Srinivasan, V. S., 1681.
- Kuzina, L. A. See Shevchenko, F. D., 59.
- Kuz'menko, N. I., Yakimets, E. M., and Vainer, M. G. Some causes of interference in the complexometric determination of calcium and magnesium and their removal, 2895.
- Kuz'min, N. M. See Zolotov, Yu. A., 483.
- Kuz'minov, V. I. See Khariton, Kh. Sh., 2520.
- Kuznetsov, A. A. See Golutvina, M. M., 1403.
- Kuznetsov, E. V. See Myagchenkov, V. A., 2574.
- Kuznetsov, V. V. See Kreshkov, A. P., 2372.
- Kuznetsova, L. B. See Kreshkov, A. P., 1835.
- Kuznetsova, V. K. Determination of gallium in antimony without removal of the base material, 2977.
- Kuznetsov-Fetisov, L. I. See Rozenberg, G. I., 1205.
- Kwapniewski, Z. See Duk, B., 3167.
- Kwarts, E. W., Looyé, A., Bouman, J. G., and Groen, A. Determination of xanthurenic acid excretion in urine, 3156.
- Kwok, J., Snyder, L. R., and Sternberg, J. C. Efficiency of chromatographic columns connected in series: non-additivity of theoretical plates in chromatography, 2253.
- Kwon, T.-W., and Ayres, J. C. Purity of aflatoxin G<sub>1</sub>: use of antioxidant and chelating agent in purification of the toxin by TLC, 1437.
- Kyriakides, E. C., and Balint, J. A. Quantitative recovery of lecithins after argentation TLC, 2627.
- Kyrš, M., and Pivonková, M. Extraction - radiometric determination of tetraphenylborate anions by concentration-dependent separation with use of caesium-137, 740.
- L
- Labuda, A. A. See Plashchinskaya, R. V., 45.
- Lacaze, P. C. See Dubois, J. E., 2323.
- Lachko, O. A. See Pastukhova, M. M., 1211.
- LaCroix, D. E., Prosser, A. R., and Sheppard, A. J. Determination of saturated and unsaturated fatty acids: comparison of GLC, thiocyanogen value and lead salt - ethyl ether methods, 2202.
- Lada, H. F. See Crisco, C., 2938.
- Ladell, J. See Abowitz, G., 2812.
- Laessig, R. H., Underwood, C. E., and Basteyns, B. J. Ultra-micro automated screening method for uric acid, 892.
- Lagarde, M., and Simonoff, G. Radiochemical separation of sulphur, 638.
- Lahmann, E., and Jander, K. Determination of formaldehyde in urban atmospheres, 2752.
- Lai, T.-S. See Lee, C. C., 1539.
- Laing, O. N. See Brophy, G. C., 2829.
- Lakonen, E. Two-phase extraction technique for determination of soluble trace elements in soil, 399.
- Lakomkin, I. G., and Alekseevskaya, N. V. Determination of cadmium by using mineral ion-exchangers, 1155.
- Lakshmanan, S. See Smathers, J. B., 1704.
- Lakshminarayana, G. See Mani, V. V. S., 2850.
- Lakshminarayana, S. Extraction from paper chromatograms, 3296.
- Laktionova, N. V. See Pavlenko, L. I., 1176.
- Lal, S., and Srivastava, S. N. Effect of surfactants on the polarographic maximum of selenium<sup>IV</sup> in the presence of mixed electrolytes, 2443.
- Lalitha, K. S., and Natarajan, S. R. Titrimetric determination of silver in plating baths, 1779.
- LaMancusa, S. J. See Romel, W. C., 2119.
- Lamb, S. I. See Jenden, D. J., 2069.
- Lamer, W. See Manecke, G., 1940.
- Lamma, F. F. See Fontani Lamma, F.
- Landault, C., Guiochon, G., and Ganansia, J. Separation of amino-acids by GLC of the N-trifluoroacetyl derivatives of their methyl esters, 867.
- Landgraf, R., and Keilhauer, H. Device for preparation and microscopic observation of fibre cross-sections, 3106.
- Landgrebe, A. R., McClendon, L. T., DeVoe, J. R., Pella, P. A., and Purdy, W. C. Application of substoichiometric radio-isotope dilution principles to controlled-potential coulometry and solvent extraction, 584.
- See also Pella, P. A., 1702.
- Landström, O. See Samsahl, K., 1985.
- Lange, P. W. de, Wet, W. J. de, Turkstra, J., and Venter, J. H. Non-destructive neutron-activation analysis of ore for gold, 2363.
- Lange, W. E., Theodore, J. M., and Pruyn, F. J. *In vivo* determination of aralkylamines, 2017.
- Langejan, M. See Gogh, H. van, 1489.
- Langer, L. See Holyńska, B., 1826.
- Langer, S. H. See Conder, J. R., 439.
- Langerijt, J. J. A. M. van de, and Planque, M. P. de. Determination of hormonal iodine in desiccated thyroid, 2690.
- Langermeersch, A. van. Identification and determination of carcinogenic hydrocarbons, 2754.
- Langley, T. J., and Weiss, J. B. Failure to detect  $\alpha_1$ -acid glycoprotein by normal staining method after zone electrophoresis, 887.
- Lanthier, J. D. See Singh, J., 2196.
- Lantz, R. S. See Walborg, E. F., jun., 2025.
- Lanzani, A., Fedeli, E., and Jacini, G. Determination of vitamin A in compound feeding-stuffs, 990.
- Lapitskaya, E. V. See Gorbenko, F. P., 2367, and Tselinskii, Yu. K., 2961.
- Lapshova, A. A. See Strukova, M. P., 1906.
- Lara, H. See Balabanoff, L., 137.
- Large, R. S., and O'Connor, L. P. Determination of neptunium-239, 1813.
- Larin, N. V. See Devyat'kh, G. G., 2943.
- Larina, L. K., Belenkov, N. S., and Sachkova, N. I. Determination of gold and silver in electrolytic copper, 48.
- Larionov, S. V. See Shul'man, V. M., 2526.



- arsen, I., and Mortensen, J. V. Removal of humins in hydrolysates of plant material for amino-acid analysis, 1469.
- arsen, N. T. A 50-micro-degree temperature controller, 2324.
- arsen, R. C. See Stefanski, R. J., 1676.
- arsson, L.-I., and Samuelson, O. Separation of sugars in spent sulphite liquor by anion exchange, 1967.
- aRue, T. A. Spot-test for hydrazine, 627. Detection of acyl hydrazides on paper chromatograms, 3072.
- ashko, N. F. See Busev, A. I., 4.
- ask, S. See Foa, E., 508.
- askorin, B. N., Shvirin, G. N., Basov, A. S., and Shvirina, E. M. Influence of the nature of quaternary ammonium compounds on the extraction of metal cyanide complexes and cyanides, 1120.
- asne, H. See Mezonnet, R., 960.
- assandro Pepe, B., Rivarola, E., and Barbieri, R. Complexes of organometallic compounds: determination of phenylthallium<sup>III</sup> dichloride with xylenol orange and EDTA, 2529.
- See also Faraglia, G., 741.
- assner, E. Determination of hydrogen and oxygen in ferrous alloys. II. Hydrogen in ferromanganese, 151. Comparison of methods for determining oxygen in chromium, 653.
- astovskii, R. P. See Temkina, V. Ya., 12.
- atham, D. R. See Okuno, I., 1362.
- atham, J. L., and Lawley, E. C. Location of conductimetric end-points by a simplified least-squares technique, 506.
- atimer, G. W., jun. Polarographic behaviour of metal chelates of *oo'*-dihydroxyazo-dyes, 1746.
- See also Fuhrman, D. L., 649.
- atta, R. E., Bittel, J. T., and Hadesty, G. B. Recording strain-gauge thermobalance, 520.
- atterell, J. J. See Stehl, R. H., 17.
- auer, G., and Osteryoung, R. A. Simultaneous determination of faradaic and capacitive charge at the dropping-mercury electrode, 1688.
- auer, R. S. See Kirillov, A. I., 2926.
- auress, S. Separation and characterisation of phytanic acid-containing triglycerides from plasma of a patient with Refsum's disease, 2045.
- ausen, T. See Jacyszyn, K., 2667.
- autenbach, A. F. See Dallas, F. C., 974.
- aver, M. L., Root, D. F., Shafizadeh, F., and Lowe, J. C. Separation and determination of the carbohydrates of wood pulp, 1966.
- averty, R., and Taylor, K. M. Improvements to the hydroxyindole fluorimetric assay of catecholamines and related compounds, 2640.
- avery, H. See Usher, C. D., 2717.
- avrov, I. A. See Anisimova, G. F., 1295.
- avrukhina, A. K., and Zaitseva, A. I. Separation of small amounts of phosphorus from large amounts of silicon, 2429.
- awless, E. W. Techniques for obtaining infra-red spectra of corrosive and moisture-sensitive solids, 1667.
- and Hennon, G. J. Infra-red cell for corrosive gases, 1666.
- awley, E. C. See Latham, J. L., 506.
- awrence, K. G. Semiconductor 'on-off' control for thermostatic bath heaters, 1022.
- awson, A. M. See McCloskey, J. A., 2310.
- ayton, R. F. See Quick, Q., 1944.
- azarev, A. I., and Lazareva, V. I. Spectrophotometric thiocyanate method for determining rhenium, 2460.
- azarev, Yu. A. See Bazhov, A. S., 564.
- Lazareva, V. I. See Lazarev, A. I., 2460.
- Leach, H. See Clarke, E. G. C., 297.
- Leaffer, M. A. See Skinner, W. A., 2677, 2753.
- Leban, M. See Wydeven, T., 480.
- Lebbe, J. See Chovin, P., 2530.
- Lebed', N. B., Pantaler, R. P., and Semenova, L. N. Determination of selenium impurity and the main components in sulphides and selenides of cadmium and zinc, 2378.
- See also Pantaler, R. P., 2376.
- Lebedeva, A. I., and Novozhilova, I. V. Micro-determination of nitrogen in organic compounds, 701.
- Lebedeva, Z. M. See Agasyan, L. B., 1234.
- Lebrecht, G. See Jentzsch, D., 3.
- Lechat, P. See Olive, G., 2135.
- Le D  m  zet, M. See Courtot-Coupez, J., 2315.
- Lederer, M. Publication of chromatographic data, 2.
- and Roch, G. Paper chromatography of azaheterocyclic hydrocarbons, 1598.
- See also Mazzei, M., 22, 1742.
- Ledru, M.-J. See Dray, F., 2056.
- Ledvina, M., and Barto  s, F. Determination of cross-links in elastin, 882.
- Lee, A. See Stern, D. J., 950.
- Lee, C. C., and Lai, T.-S. Studies with radioactive tracers. XI. Use of *N*-[1-<sup>14</sup>C]ethylmaleimide in the determination of flour mercapto-groups and correlations between masked mercapto-groups and loaf volumes, 1539.
- Lee, F. See Griffiths, T. R., 475.
- Lee, F. A. Unit for proteolytic activity determined by the modified Ayre - Anderson method, 904.
- Lee, W.-H. See Paliokas, A. M., 2631.
- Le Gall, Y. See Truffert, J., 703.
- Legan, J. S. See Haining, J. L., 1482.
- L  ger, J. See Hermann, R., 2496.
- L  gr  di, L. Mechanism of adsorption indication. I. Nitro-acids as adsorption indicators: 4-(4-nitrophenylazo)-1-naphthylamine, 1106; II. Amphoteric adsorption indicators, 2854; III. 4-(4-Nitrophenylazo)-1-naphthol as adsorption indicator, 2854; IV. Combination of the Fajans indication and the acid - base principle, 2854.
- Legrand, G. See Voinovich, I. A., 73.
- Lehmann, K. L., and McIlroy, R. J. Determination of soluble carbohydrates in the seeds of tropical pasture species, 2214.
- Lehrfeld, J. TLC of trimethylsilylated carbohydrates, 3065.
- Leibman, K. C., and Ortiz, E. Colorimetric determination of glycols, 2039. TLC and GLC of trimethylsilyl ethers of glycols, 3144.
- Leibbrand, R. J. Atlas of gas analyses by gas chromatography, 14.
- Leijnse, B. See Blijenberg, B. G., 1992.
- Leinweber, F.-J., and Walker, L. A. Isotopic determination of histidine decarboxylase: disposable assay phial, 348.
- Leitch, R. E., Rothbart, H. L., and Rieman, W., III. Chromatographic separation of diastereoisomeric esters. II. Mandelates and lactates of 2-methylbutanol, 3-methylbutan-2-ol, pentan-2-ol and hexan-2-ol, 3071.
- Leitner, J. W. See Kirsch, W. M., 289.
- Lel'chuk, Yu. L., and Glukhovskaya, R. D. Sorption - photometric determination of traces of iron in materials used in production of phosphors, 2463.
- and Ivashina, V. A. Extraction - photometric determination of boron in high-purity tin, 2956.
- Lemaitre, A. See Dewillers, P., 1610.
- Lemberg, S. See Mitzner, B. M., 2544.

- Lemeignan, M. See Oliver, G., 2135.
- Lemm, H. See Koch, W., 1278.
- Lench, A. Determination of phosphorus in steel with quinolinium molybdate, 157.
- Lenz, K. See Barthel, J., 1718.
- León Morán, L. See Lucena-Gonde, F., 654.
- Leont'eva, K. D., and Shelankova, R. V. Phase analysis of copper ores and their enrichment products containing metallic copper and copper sulphides, 1140.
- Leroux, J., and Mahmud, M. Improvement of X-ray spectrographic analysis by filtration of the L lines from the primary beam, 2287.
- Mahmud, M., and Davey, A. B. C. Fluorescence yield of an element as a function of the spectral distribution of the primary beam, 1083.
- Le Roy, W. W. See Mentley, A. A., 2584.
- Leschber, R. Determination of total and free cyanide in effluents by known methods, 419.
- Leschner, O. See Hildebrand, G., 3095.
- Lesigang-Buchtela, M., and Buchtela, K. Thin-layer electrophoresis of alkali-metal ions on salts of heteropoly-acids, 1139.
- Lesimple, C. See Saint-Yrieix, A., 733, 1064.
- Lester, R. L., and White, D. C. GLC determination of ethanalamine, methylethanalamine and dimethylethanalamine derived from lipids, 835.
- LeTourneau, R. L. See Gallegos, E. J., 1357.
- Leupin, K. See Tschan, D., 1512.
- Leusen, I. See Eechaute, W., 2058.
- Leuteritz, F., and Brunner, G. Determination of chlorine in poly(vinyl chloride) and in post-chlorinated poly(vinyl chloride) by X-ray fluorescence, 1969.
- Levallois, C. See Claude, J. R., 2624.
- Levangie, R. F. See Bombaugh, K. J., 3.
- Leveque, R. E. Determination of  $C_3$  to  $C_8$  hydrocarbons in naphthas and reformates by capillary-column gas chromatography, 1359.
- Levi, L. See French, W. N., 2125.
- Levin, E. A. See Makarov, A. Yu., 2071.
- Levin, E. S. See Fodiman, Z. I., 1961, 2543.
- Levina, N. S., Genkin, A. N., Nemtsov, M. S., Gutman, L. M., and Samuilova, T. I. GLC analysis of the products of the synthesis of isoprene from isobutene and formaldehyde, 3120.
- Levine, J. See Doyle, T. D., 1, and Smith, E., 1.
- Levine, S. L., and Golden, H. J. Photometric end-point detection in EDTA titration of zinc in the presence of manganese, 581.
- Levins, R. J., and Ottenstein, D. M. Effect of tubing material in GLC of polyhydric alcohols and vanillins, 717.
- Levitskaya, T. I. See Vinkovetskaya, S. Ya., 2988.
- Levitskii, A. P. Potentiometric determination of esterase activity, 2669.
- Lavorato, C., and Cima, L. TLC determination of thiamine salts, phosphoric esters and disulphides, and their respective thiochromes, 3213.
- Levy, G. See Nagashima, R., 2019.
- Levy, J. H. N., and Lifshitz, A. Apparatus for extraction of fat, 1570.
- Levy, P. R. See Diamond, E. M., 318.
- Levy, R. L., Gesser, H. D., and Westmore, J. B. Loss of chromatographic resolution in the vacuum line of a gas chromatograph - mass spectrometer system, 3312.
- Murray, D. A., Gesser, H. D., and Houghen, F. W. Method for flow control during coating of open-tubular columns for gas chromatography, 2790.
- Lew, R. B. Spectrophotometric determination of ferric acetylacetonate in uncured terpolymer with nitrosoresorcinol, 2572.
- Lewandowska, I., and Sokolowska, I. TLC determination of alkaloids in preparations of the Pantopon type, 2681.
- Lewis, D. See Irving, H. M. N. H., 2918.
- Lewis, W. M. Titrimetric determination of sulphate and chloride in water with diphenylcarbazone as indicator, 2758.
- Li, S.-C., and Huang, W.-T. GLC determination of acrylonitrile prepared from liquefied petroleum gases, 232.
- Liam-Ngoc-Thu, Dranitskaya, R. M., and Nazarenko, V. A. Extraction - fluorimetric determination of gallium by use of 4-(5-chloro-2-hydroxyphenylazo)resorcinol, 2916.
- Libby, D. A. See Prosser, A. R., 1510.
- Libenson, D. D. See Sax, S. M., 280.
- Libergett, E. See Feigl, F., 1844.
- Liberti, A. See Cartoni, G. P., 217.
- Liboff, A. R. See Shamos, M. H., 3346.
- Lie, S. L. See Sotobayashi, H., 2570.
- Liehl, H. Ion micro-probe mass analyser, 2290.
- Liebmann, R., and Schuhmann, H. Application of multiple-layers to TLC, 1052.
- Liener, I. E. See Papaioannou, S., 3188.
- Lifshitz, A. See Cohen, S., 379, and Levy, J. H. N., 1570.
- Liggett & Myers Tobacco Co. Apparatus for continuous measurement of moisture in tobacco, 2251.
- Light, J. F. See McKinney, R. W., 2804.
- Light, T. S. See McCrea, P. F., 1311.
- Ligny, C. L. de, and Alfenaar, M. Universal pH scale for solutions at different temperatures and in different solvents, 1685.
- and Remijnse, A. G. Peak broadening in paper chromatography and related techniques. III. Peak broadening in TLC on cellulose powder, 2.
- See also Alfenaar, M., 1686.
- Lihl, F. See Wagendristel, A., 1731.
- Liiva, R. See Frei, F. W., 2341.
- Likashenko, I. M. See Polyakova, A. A., 1953.
- Likens, S. T., and Nickerson, G. B. Use of pyridine in the conductimetric measurement of hog  $\alpha$ -acids, 965.
- Lillard, Y. See Rinderknecht, H., 2674.
- Lilly, M. D. See Flynn, D. S., 2843.
- Lin, E. See Chen, S. N., 110.
- Lin, W.-S. Determination of aromatic compounds by ultra-violet spectrophotometry. I. Determination of benzene, 2531; II. Determination of benzene and toluene in admixture, 2531; III. Determination of xylene isomers and ethylbenzene, 2531.
- Lin, Z. F. See Rechnitz, G. A., 118.
- Lindeman, L. P. See Gallegos, E. J., 1357.
- Lindén, E., and Schill, G. Determination of atropine in the presence of pralidoxime chloride, 1499.
- Linder, D. E. Trioctylarsine oxide as a reagent for liquid - liquid extraction, 2856.
- Lindholm, A. See Wänninen, E., 44.
- Lindley, H., and Haylett, T. Use of ion-exchange cellulose columns with an AutoAnalyzer technique for the fractionation of peptides, 2082.
- Lindner, R., and Oehler, E. Analysis of tri-chlorophen. I, 2747.
- Lindsey, K. See Franks, A., 2814.
- Lindsjö, O. See Kinnunen, J., 102.
- Lindskoug, B., Johansson, M., Karlsson, R., and Kellgren, R. Measuring device for thermoluminescence dosimetry, 489.
- Lineberg, B. D. Measurement of water impurities in oil, 765.



- Linehan, D. J. See Ault, R. G., 971.
- Lingane, J. J. Coulometric determination of barium, and its separation from strontium by controlled-potential electrolysis, 580.
- Linnenbom, V. J. See Swinnerton, J. W., 1018.
- Lipiec, T. See Maroszyńska, K., 3230.
- Lipkin, F. M. See Betin, Yu. P., 1656.
- Lippi, U., and Pulido, E. Staining of lipoprotein fractions after electrophoresis and immuno-electrophoresis, 1463.
- Lipshtein, A. R. See Usova, É. P., 1349.
- Lipsky, S. R. See Horváth, C. G., 335, 1624.
- Liptay, G. See Erdey, L., 1773.
- Lipton, A. Improved programmed controller for sequential laboratory operations, 427.
- Lis, B. See Jęczalik, A., 563.
- Lisetskaya, G. S. See Babko, A. K., 28.
- Lisichenok, S. I. See Vdovenko, M. E., 598.
- Lisk, D. J. See Bache, C. A., 1563, Gutenmann, W. H., 2749, and St. John, L. E., jun., 2608.
- Lisnyak, S. S. See Chervinko, A. G., 3034.
- Lisowski, Z. See Kubalski, J., 2164.
- Liteanu, C., and Gocan, S. Thermal paper chromatography. IX. Mechanism of the action of temperature gradient, 1047.
- and Mioșcu, M. Use of membranes for determining equivalence-point. III. Membranes of parchment paper impregnated with precipitates of alkaline-earth-metal cations, 3344.
- Litigio, G. See Sironi, G., 116.
- Little, R. L. See Kadish, A. H., 2614.
- Litimiský, J., Kolinský, M., Pauker, O., Drahovzalová, M., Zítová-Němcová, H., and Horáček, S. Emission-spectrographic determination of iron in very pure quartz, 612.
- Litsey, C. T. See Heffelfinger, R. E., 1827.
- Littlewood, A. Multi-range recorder with linear scale for conductivity measurements, 505.
- Littlewood, A. B. The processing of gas-chromatographic data, 3. Informal discussion of the Gas Chromatography Discussion Group of the Institute of Petroleum, London, 529. Informal symposium of the Gas Chromatography Discussion Group and the Infra-Red Discussion Group: instrumentation of gas chromatography and infra-red spectroscopy linked, 2787. Coupling of gas chromatography with methods of identification. I. Mass spectrometry, 2803.
- and Willmott, F. W. Equivalence of various mixtures as stationary phases in GLC, 1067.
- Litwick, G. See Weinstein, A., 341.
- Liu, C.-S. See Muzzarelli, R. A. A., 1154.
- Livshits, D. M. Spectrographic determination of rhodium, palladium, platinum and gold in ores, 3041.
- Lloyd, J. B. F. TLC detection of microgram amounts of nitroglycerin and related compounds, 278.
- Lloyd, J. T. See National Research Development Corporation, 1026.
- Loasby, R. G. Low-inertia hot-cold microscope-stage, 2839.
- Loeb, B., and Goodman, M. M. Dry-column chromatography: preparative technique with the resolution of TLC, 1625.
- Loewenguth, J. C., and Tourres, D. A. Variations in retention index as a function of temperature: application to qualitative and quantitative analysis of complex mixtures of hydrocarbons, 3.
- Loftin, H. P., jun. See Robinson, J. W., 3327.
- Loginova, N. K., Baranova, V. G., and Kastorskaya, K. A. Absorptometric determination of ammonia in isoprene and butadiene, 1394.
- Loiselet, J., and Srouji, G. Use of a coulometric pH-stat with numerical read-out for measuring cholinesterase activity, 2670.
- Lolomova, N. S. See Zolotukhin, V. P., 2366.
- Lomekhov, A. S. See Kreimer, S. E., 1783.
- London, M., Freiburger, I. A., and Marymont, J. H., jun. Analyses on heat-coagulated blood and serum: determination of creatinine, 857.
- Long, D. E. Colorimetric determination of malathion and parathion by using fluoroboric acid, 997.
- Long, I., jun. See Evans, M. E., 3064.
- Long, M. I. E., and Marshall, B. Kjeldahl digestion unit, 422.
- Long, R. See Chakraborty, B. B., 1004.
- Long, R. E., and Guvernator, G. C., III. Determination of traces of 2,6-di-*t*-butyl-*p*-cresol in polyethylene by using electron-capture GLC, 270.
- Longbottom, J. E. See Gales, M. E., jun., 2757.
- Look, J. Field screening test for lysergide, 933.
- Looyé, A. See Kwarts, E. W., 3156.
- Lopez, A., and Crawford, M. A. Determination of aflatoxin content of groundnuts, 2180.
- López Lozano, M. Detection of high concentrations of chloride in milk, 1542.
- Lóránt, B. Derivatographic study of molten-phase reactions of chromium<sup>III</sup> oxide and of alkali-metal phosphates, 2334.
- Loree, S. Determination of fluorine in silicates, 1193.
- Lőrinc, I. Development of on-line analytical instruments, 1098.
- Losev, N. F. See Afonin, V. P., 2815, Narbutt, K. I., 4, and Studennikov, Yu. A., 1240.
- Losi, G. See Capella, P., 2730.
- Losio, E. See Giuffrè, L., 1831.
- Losse, A. See Wolf, F., 214.
- Lott, P. F. See Wiersma, L. D., 2979.
- Louis, L. N. See Gordon, A. H., 1077.
- Louis, R. Separation efficiency of stationary phases in GLC, 2795.
- Louvrier, J. See Voínovich, I. A., 73.
- Louwerse, H. L. See Bibo, B. H., 3.
- Lovasi, J., and Tomcsányi, L. Anodic-stripping voltammetric determination of silver in aluminium, 2383.
- Lovelock, J. E. See Simmonds, P. G., 445.
- Loveridge, B. A., and Gordon, M. S. Determination of radio-iodine in effluents, 1608.
- and McInnes, C. A. J. Micro-analytical determination of boron in steel by using the <sup>10</sup>B(n,α)<sup>7</sup>Li reaction, 3022.
- Lovering, J. F. See Gulson, B. L., 2433, and Morgan, J. W., 659.
- Lowe, J. C. See Laver, M. L., 1966.
- Lown, D. A., and Wynne-Jones, W. F. K. Electrolytic conductance cell for use at elevated temperatures and pressures, 1698.
- Lowry, R. R., and Tinsley, I. J. Device for applying detection reagents to micro-plates, 2260.
- Lozano, J. S. See Simal Lozano, J.
- Lozano, M. L. See López Lozano, M.
- Lozanovskaya, I. N., and Petrashen', V. I. Determination of vanadium by interaction of vanadium<sup>IV</sup> with arsenazo I, 2433.
- Lubecki, A., and Wasilewska, M. Two radiometric methods for fast determination of calcium in cement raw mix, 2493.
- Lubyová, Ž., Malinovský, M., and Matiašovský, K. Simultaneous photometric determination of sodium and lithium, 561.
- Lucas, G. H. W. See Koreczak-Fabierkiewicz, C., 1417.
- Lucas, W. V. See Fassel, V. A., 2404.
- Lucchini, C. A. See Chasar, A. G., 999.



- Luze, E. N. See Marquardt, R. P., 207.
- Lucena-Conde, F., Vicente-Pérez, S., and León Morán, L. Analytical chemistry of less-common oxidation states. VII. Spectrophotometric determination of molybdenum with 1,10-phenanthroline, 654.
- See also Hernández Méndez, J., 2390, 2464.
- Lucia, J. C. de, and Ferrero, N. Complexometric determination of calcium in milk, 373.
- Luckner, M. See Nover, L., 2136.
- Ludemann, W. D. See Stutz, M. H., 2258.
- Lüdy-Tenger, F. TLC on microscope slides: application in pharmacy and biochemistry, 3298.
- Luff, K. F. See Bergwerksverband G.m.b.H., 2241.
- Lugovoi, S. V., and Ryazanov, I. P. Anodic polarographic determination of amidopyrine, 2147.
- Luhleisch, H. Puncture-cap technique in gas chromatography: quantitative investigation of the effect of punctures and other factors, 1058.
- Luis, P., Carducci, C. N., and Sá, A. Ultra-micro detection of formic, acetic and other organic acids, 1927.
- Sá, A., and Mascará, A. Detection of anions on the micro- or ultra-micro scale. I. General orientation tests, 1741.
- See also Sá, A., 1904.
- Luisi, M. See Carnicelli, A., 2055.
- Lukáč, P. See Tölgyessy, J., 281.
- Lukasiewicz, R. J. See Fitzgerald, J. M., 1107.
- Łukaszewicz-Busz, A. See Gielzowski, H., 2470.
- Luke, C. L. Spectrophotometric determination of tin in metals and alloys, 617. Spectrophotometric determination of traces of metals in ferrous and non-ferrous metals and alloys after isolation by iodide extraction, 1124.
- Lukhovitskii, V. I., Chikin, Yu. A., and Karpov, V. L. Separation and purification by continuous fractional crystallisation, 1030.
- Lund, E. D., and Kunsman, C. E. Stream splitter for liquid chromatography, 1628.
- Lund, P. K. See Mathies, J. C., 803.
- Lupovitch, A. Phenothiazine interference in the Porter - Silber reaction, 2635.
- Lur'e, A. A. Quantitative analysis by diffusion of the substance to be determined into a gel containing a precipitant, 30.
- Lur'e, Yu. Yu., and Antipova, P. S. Determination of non-ionic synthetic surface-active substances in effluents, 1020.
- See also Chudina, R. I., 1141.
- Lushchekina, L. I. See Simonov, V. D., 1347.
- Lushina, V. K. See Solodovnik, S. M., 1838.
- Luskina, B. M., Turkel'taub, G. N., and Syavtsillo, S. V. Determination of methylphenylpolysiloxanes by low-temperature GLC, 1387.
- See also Turkel'taub, N. M., 1764.
- Luther, A. C. See Mackenzie, R. D., 827.
- Lutomski, J., Kowalewski, Z., Drost, K., and Kucharska, M. Simple 9H-pyrido[3,4-b]indole alkaloids. IV. Determination of harman and harmine in plant material, 3206.
- Lüttich, W. See Neurath, G., 1096.
- Luy, H. See Guthrie, H., 121.
- L'vov, A. M. See Klimova, V. A., 1893, 1894.
- Lyakhov, B. F. See Kudryavtsev, V. N., 2465.
- Lyalikov, Yu. S., Kopanskaya, L. S., and Kuleva, Z. P. Determination of copper, germanium and selenium in ternary semiconductor systems by a.c. polarography, 1119.
- and Madan, L. G. Determination of silver by a.c. polarography with solid electrodes, 1781.
- See also Bruk, B. S., 2319, and Kopanskaya, L. S., 2387.
- Lyman, G. F., and DeVincenzo, J. P. Determinations of picogram amounts of ATP using the luciferin - luciferase enzyme system, 1477.
- Lynch, V. P. See Crossley, H., 3250.
- Lyndrup, M. L. Conversion of commercial automatic titrators into automatic micro-titrators, 504.
- Lysenko, S. A. See Kuteinikov, A. F., 2989.
- Lysyák, V. T. See Karpov, O. N., 241.
- Lysyj, I., and Nelson, K. H. Gas-chromatographic determination of non-volatile organic matter in aqueous solution, 2495.
- Lyutaya, M. D., Chernyš, I. G., and Serebryakova, T. I. Phase analysis of products, containing boron nitride, obtained by the interaction of boron trichloride and ammonia, 2910.

## M

- Ma, T. S., and Roper, R. Microchemical investigation of medicinal plants. I. The antitubercular principle in *Prunus mume* and *Schizandra chinensis*, 2126.
- Maas, K., and Schildknecht, H. Micro-column crystallisation: separation and purification of organic and inorganic substances, 3.
- Mabuchi, T. See Saito, H., 1664.
- Macaraeg, P. V. J., jun. See Bianchini, J. R., 1420.
- McBeth, R. L. See Gruen, D. M., 2827.
- McBride, C. H. See Guerrant, G. O., 1578.
- McCarter, R. J. Controlled temperature blender - reaction vessel, 2771.
- McCarthy, D. E. Transmittance of optical materials from 0.17 to 3 micrometres, 477. Infra-red spectra of optical polishing compounds, 2809.
- McCarthy, W. J. See St. John, P. A., 1099, and Winnefordner, J. D., 3334.
- Macchi, R. A., and Crespo, F. Acetonised mono-glycerides: determination of combined acetone, 1926.
- See also Kuck, J. G. de, 2203.
- McClendon, L. T. See Landgrebe, A. R., 584.
- McCloskey, J. A., Stillwell, R. N., and Lawson, A. M. Use of deuterium-labelled trimethylsilyl derivatives in mass spectrometry, 2310.
- McConnell, D. G., Hoffmann, R. L., Elman, G. J., and Evans, C. D. Silicic acid column chromatography: parameters for a binary solvent system, 1043.
- See also Hoffmann, R. L., 1042.
- McCormick, D. B. Determination of the extent of deoxygenation, 624.
- McCourtney, E. J. See Evans, W. J., 1716.
- McCrea, G. L. See Grob, R. L., 737.
- McCrea, P. F., and Light, T. S. Emission response of some hydrocarbon - methanol solutions in hydrogen flames, 1311.
- McCullough, H. Simple micro technique for the determination of blood ammonia: the effect of exercise, 2003.
- McCullough, T. See Jong, E. de, 227.
- Macdonald, A. M. G., and Van der Voort, F. H. Separation of silicon and phosphorus with ammonium molybdate and their successive determination, 2411.
- McDonald, C. W., and Bedenbaugh, J. H. Spectrophotometric determination of iron by using ethyl 4,6-dihydroxy-5-nitrosocinotinate, 142.
- Macdonald, J. C. GSC determination of hydrogen in helium carrier-gas stream with thermal-conductivity detection, 2347.
- MacDonald, R. P. See Hess, J. W., 908.

- MacDonald, W. B., and Fellers, F. X.** Quantitative measurement of cystine in urine: modification of the Sullivan test with sodium 1,2-naphthoquinone-4-sulphonate, 2081.
- MacDonell, H. L.** Very lightly loaded textured glass beads as support for gas-liquid partition chromatography, 2269.
- Macek, K.** Decomposition of substances at the origin in TLC, 2. Comparison of reproducibility in paper chromatography and TLC, 2.  
— See also **Wagner, H.**, 1344.
- McFadden, W. H.** See **Stern, D. J.**, 950.
- MacGee, J.** Characterisation of mammalian tissues and micro-organisms by GLC, 1982.
- McGee, T.** See **Boswell, G. G. J.**, 1284.
- McGilveray, I. J.** See **Fooks, J. R.**, 2689.
- Machata, G.** Ethyl ether content of body fluids in narcosis, 2016. GLC determination of blood alcohol, 2021. Determination of the source of carbon monoxide poisoning, 3128.
- Machida, W.** See **Utsumi, S.**, 199, 1603.
- Máchová, I., and Dokládálová, J.** Determination of nitrite, 1204.  
— See also **Dokládálová, J.**, 639.
- Machovičová, F.** See **Dušinský, G.**, 354.
- McIlroy, R. J.** See **Lehmann, K. L.**, 2214.
- McInnes, C. A. J.** See **Loveridge, B. A.**, 3022.
- McIntyre, J. M., Melton, S., and Amis, E. S.** Polarography of some neptunium<sup>V</sup> and neptunium<sup>VI</sup> complexes, 1183.
- McIsaac, W. M., Ho, B. T., Estevez, V., and Powers, D.** Chromatography of derivatives of  $\beta$ -carboline, 1355.
- McKellar, J. F., and Porteus, G. T.** Determination of small amounts of perylenetetracarboxylic 3,4:9,10-dianhydride in pigments by spectrofluorimetry, 772.
- Mackenzie, R. D., Blohm, T. R., Auxier, E. M., and Luther, A. C.** Colorimetric micro-method for free fatty acids in plasma, 827.
- McKenzie, W. F.** See **Trusell, F. C.**, 2882.
- McKinley, W. P.** See **McLeod, H. A.**, 1558, and **Mendoza, C. E.**, 2219.
- McKinney, R. W., Garst, G. R., Raver, R. E., and Harris, W. O.** Computer storage and retrieval of information from Preston gas-chromatography abstract cards, 2801.  
— and **Jordan, R. L.** Evaluation of coated molecular sieves for GLC, 441.
- Light, J. F., and Jordan, R. L.** Mass-spectrometric and thermogravimetric examination of GLC liquid-phase materials, 2804.
- McLafferty, F. W.** See **Shannon, T. W.**, 1678.
- McLane, S. B.** See **Müller, E. W.**, 2314.
- McLaren, K. G., and Williams, W. T.** Improved automatic Töpler pump, 1618.
- MacLean, K. S., Byers, D. L., and Brown, M. H.** Spectrophotographic determination of lead in agricultural and related materials, 1577.
- McLeod, H. A., Mendoza, C. E., Wales, P. J., and McKinley, W. P.** Comparison of various carbon adsorbents and quantitative elution and separation of forty-two pesticides from a carbon-Solka Flocc clean-up column, 1558.  
— See also **Mendoza, C. E.**, 2219.
- McMahon, J.** Influence of light and acid on the measurement of ferrous iron in lake water, 2763.
- McMillan, J. W.** Radioactive tracer methods in inorganic trace analysis: recent advances, 1705.  
— See also **Jenkins, W.**, 83.
- McMurray, W. R., Peisach, M., Pretorius, R., Merwe, P. van der, and Heerden, I. J. van.** Isotopic determination of calcium-43 and calcium-48 by neutron time-of-flight spectrometry, 2368.
- Macnab, J. I.** See **Hardy, J. A.**, 447.
- McNair, H. M., and Bonelli, E. J.** Instrument diagnosis by chromatogram analysis in gas chromatography. [I], 2800.
- McNeely, R. L.** See **Murray, R. W.**, 50.
- McQueen, R. J.** See **Guilbault, G. G.**, 2866.
- McTaggart, N. G.** See **Primavesi, G. R.**, 1056.
- Madam, L. G.** See **Lyalikov, Yu. S.**, 1781.
- Madison, B. L., and Guyon, J. C.** Spectrophotometric determination of thorium with molybdophosphoric acid, 1179.
- Maehr, H., and Schaffner, C. P.** Separation and differentiation of the gentamycin complex, 923.
- Maes, G. L.** See **Knockaert, O. E.**, 2002.
- Magno, F., and Fiorani, M.** Titration of nitrite with electrolytically generated bromine, 2966.  
— See also **Fiorani, M.**, 507.
- Mahadevan, E. G.** Use of dimethyl sulphoxide as a solvent for the rapid isotopic analysis of water by infra-red spectrophotometry, 557.
- Mahadevan, V., and Stenroos, L.** Quantitative analysis of volatile fatty acids in aqueous solution by GLC, 224.  
— See also **Viswanathan, C. V.**, 715.
- Mahanand, D., and Houck, J. C.** Fluorimetric determination of zinc in biological fluids, 1996.
- Mahmud, M.** See **Leroux, J.**, 1083, 2287.
- Mahn, F. P., Viswanathan, V., and Senkowski, B. Z.** Determination of terpin hydrate in elixirs containing codeine or dextromethorphan hydrobromide by GLC, 2160.
- Mahne, E. J., and Pinfold, T. A.** Precipitate flotation. I. Removal of nickel from dilute aqueous solutions and its separation from cobalt, 3033.
- Maier, C. L., jun.** Preparative thin-layer gel filtration, 3301.
- Maierhofer, J.** See **Büger, P.**, 2335.
- Maillard, A.** See **Deluzarche, A.**, 979.
- Maierova, R. V.** See **Dement'eva, M. I.**, 2579.
- Maire, J.-C.** See **Deluzarche, A.**, 979.
- Majer, J., and Riečanská, E.** New complexans. XI. Chelating properties of *N*-carboxymethyl-*N*-(2-hydroxyethyl)alanine and of *NN*-bis-(2-hydroxyethyl)alanine, 2327.
- Majer, J. R.** See **Belcher, R.**, 1045, and **Jenkins, A. E.**, 551, 2849.
- Majewska, J.** Determination of sulphur in polymers and copolymers for fibre manufacture, 3108.
- Majláč, P., and Bayer, I.** Identification of alkaloids and tests for impurities. VI. Purity test for nalorphine by paper chromatography, 1495.
- Majumdar, A. K., and Bhowal, G.** Internal electrolysis for the separation of ions: micro-determination and separation of nickel and cobalt, 674.  
— and **Das, M. K.** Paper chromatography for the separation of ions: effect of thiocyanate, 32.  
— and **Saha, S. C.** 2-(3-Hydroxy-3-phenyltriazeno)-benzoic acid as reagent for the direct gravimetric determination of titanium<sup>IV</sup>, 2958.
- Majumder, G. C.** See **Ganguli, N. C.**, 1544.
- Makarov, A. Yu., and Levin, É. A.** Determination of 5-hydroxytryptamine in blood and spinal fluid by a modified fluorimetric method, 2071.
- Makarov, M. K.** See **Kamaeva, L. V.**, 3030.
- Makes, J.** Paper chromatography of phenols and cresols. I. Preparation and chromatographic behaviour of pure azo-dyes, 2532.
- Makhmetov, M. Zh., and Polukarov, A. N.** Separate determination of tellurites, tellurates, selenites and selenates, 1237. Detection and determination of tellurium in the presence of selenium, 2995.
- Makogonenko, A. G.** See **Neporent, B. S.**, 483.



- Makogonova, L. N.**, and **Kurbatova, V. I.** Determination of tantalum in metallic niobium, 1219.
- Maksimov, D. E.** See **Rudnevskii, N. K.**, 1790.
- Malakhov, V. V.**, **Protopopova, N. P.**, **Trukhacheva, V. A.**, and **Yudelevich, I. G.** Spectrochemical analysis of high-purity tin, 2955.
- Malanoski, A. J.**, **Greenfield, E. L.**, **Barnes, C. J.**, **Worthington, J. M.**, and **Joe, F. L., jun.** Determination of polycyclic aromatic hydrocarbons in smoked foods, 2175.
- Malik, W. U.**, **Chand, P.**, and **Saleem, S. M.** Determination of critical micelle concentration of non-ionic surfactants by electrocapillary curves, 1952.
- and **Gupta, G. C.** Polarographic reduction behaviour of clay minerals, 1890.
- and **Om, H.** Amperometric titrations of cobalt<sup>II</sup> with ferricyanide in ammonium citrate and glycine media, 672.
- Malikova, E. D.**, **Dmitrieva, I. B.**, **Kononov, E. E.**, and **Desyatnikina, E. A.** Determination of oxygen in caesium by vacuum distillation, 2880.
- Malinovskaya, A. F.** See **Bazhov, A. S.**, 2819.
- Malinovskiy, M.** See **Lubyova, Z.**, 561.
- Malkina, T. G.**, **Podchainova, V. N.**, and **Stashkova, N. V.** Absorptiometric determination of copper in aluminium alloys, 1161.
- See also **Podchainova, V. N.**, 1144.
- Malloy, E. C., jun.** See **Fishman, M. J.**, 3277.
- Mallow, W. A.** See **Bollinger, J. N.**, 514.
- Malo, B. A.** See **Baker, R. A.**, 1011, 2767.
- Malofeeva, G. I.** See **Rudnev, N. A.**, 2389.
- Maltese, P.**, **Clementini, L.**, and **Mori, A.** Determination of traces of chlorine in polypropene, 777.
- Mal'tsev, V. F.** See **Pashchenko, E. N.**, 1877.
- Mal'tseva, L. S.** See **Gusev, S. I.**, 2416.
- Mal'yukov, B. A.**, **Ukrainskiy, Yu. M.**, and **Korolev, V. E.** X-ray spectrographic determination of chlorine in films of silicon dioxide on semiconductor silicon, 1194.
- Mal'yutina, T. M.**, and **Orlova, V. A.** Extraction-photometric determination of micro amounts of iron in titanium<sup>IV</sup> chloride, 2959.
- Mamedov, M. A.** See **Popova, T. P.**, 3111.
- Mancheron, D.** See **Pellerin, F.**, 1137.
- Mancini, V. J.** See **Mitzner, B. M.**, 2544.
- Mandel, P.** See **Freyss, L.**, 310.
- Mandema, E.** See **Ruinen, L.**, 2029.
- Manecke, G.**, and **Lamer, W.** Resolution of racemic compounds on optically active high polymers. III, 1940.
- Mangin, P.** See **Falgoux, D.**, 3.
- Mangold, H. K.** See **Schmid, H. H. O.**, 833.
- Mangravite, R. V.** Application of differential thermal analysis to TLC, 1929.
- Mani, V. V. S.**, and **Lakshminarayana, G.** Chromatographic detection of adulteration of oils and fats, 2850.
- Manko, R.** See **Soczewinski, E.**, 2.
- Manku, G. S.**, **Bhat, A. N.**, and **Jain, B. D.** Spectrophotometric studies of the ruthenium<sup>III</sup> and rhodium<sup>III</sup> complexes of 4-hydroxycoumarin oxime and simultaneous determination of the two metals, 678. 4-Hydroxycoumarin oxime as a reagent for the separation and gravimetric determination of palladium and cobalt, 680.
- Mann, J.** See **Flaschka, H.**, 164.
- Manner, L. P.** See **Guth, J. A.**, 406.
- Manning, D. C.** Determination of boron, beryllium, germanium and niobium with the nitrous oxide-acetylene flame, 1753.
- and **Fernandez, F.** Cobalt spectral interference in the determination of mercury, 2904.
- Manning, D. J.** See **Goulden, J. D. S.**, 400.
- Manning, J. A.** See **Sardesai, V. M.**, 2623.
- Manning, R. J.** Selection of gases for use in flame photometry, 3324. Hollow-cathode lamps: a progress report, 3326.
- Manolkidis, K. A.** See **Marcopoulos, C. A.**, 3257.
- Manolov, K. R.** Identification of amidoximes by precipitation of their iron<sup>III</sup> complexes with thiocyanate, 2540.
- Mansfield, J. M., jun.**, and **Winefordner, J. D.** Measurement of flow rate and pressure of gases in flame spectrometry, 3325.
- See also **Bratzel, M. P., jun.**, 583.
- Manthei, R. W.** See **Stambaugh, J. E.**, 754.
- Manuel, A. J.** Measurement of residues of phorate and *OO*-diethyl *S*-ethylsulphonylmethyl phosphorothioate in plant tissues by total phosphorus determination, 2750.
- Mapper, D.** See **Pierce, T. B.**, 76.
- Marchenko, P. V.**, and **Obolonchik, N. V.** Interaction of tin<sup>IV</sup> with 5-chloro-3-(2,4-dihydroxyphenylazo)-2-hydroxybenzenesulphonic acid, 92. Extraction-absorptiometric determination of tin in high-purity indium, 2388.
- Marcopoulos, C. A.**, and **Manolkidis, K. A.** Radiochemical determination of absolute neutral-oil content of vegetable oils, 3257.
- Marcotrigiano, G.** See **Muzzarelli, R. A. A.**, 1154.
- Marcoux, L. S.**, and **Adams, R. N.** Construction of platinum rotating-disc electrodes, 1684.
- Marcu, P.** See **Popper, E.**, 108.
- Marcus, Y.** See **Zangen, M.**, 3059.
- Marczenko, Z.**, and **Mojski, M.** Scheme of separation and colorimetric determination of trace amounts of eighteen metals, 548.
- See also **Kasiura, K.**, 2899.
- Mardens, Y.** See **Adriaenssens, K.**, 2077.
- Marec, N.** See **Braddock, LeR. I.**, 1066.
- Marek, J.**, and **Marková, D.** Chromatographic investigation of the sulphonation products of 3-hydroxy-2-naphthoic acid, 251.
- Marenkova, I. N.** See **Khovyakova, R. F.**, 2964.
- Mareš, P.** Micro-method and apparatus for lipid methanolysis, 3146.
- Mareš, V.**, and **Stejskal, Z.** Identification of dyes used for colouring drugs, 1490.
- Mareva, S.** See **Iordanov, N.**, 3002.
- Margerum, D. W.**, and **Stehl, R. H.** Determination of traces of dissolved oxygen by reaction with pentacyanocobaltate<sup>II</sup> coupled to co-ordination chain detection, 414.
- See also **Stehl, R. H.**, 17.
- Marhold, J.** See **Zvěřina, V.**, 1962.
- Marigo, M.** See **Fiori, A.**, 809.
- Marik-Korda, P.** See **Erdey, L.**, 1773.
- Marinenco, G.**, and **Taylor, J. K.** High-precision coulometric iodometry, 104.
- Marini-Bettolo, G. B.** The European Pharmacopoeia and common European standards for drugs and medicaments, 1.
- **Delle Monache, F.**, **Gelabert de Brovetto, A.**, and **Corio, E.** Separation and identification of minor alkaloids of *Strychnos nux vomica*, 1.
- See also **Delle Monache, F.**, 2131.
- Marinković, M. D.**, and **Antić-Jovanović, A. M.** Spectrographic determination of beryllium in its minerals with a gas-stabilised arc, 54.
- Marino, A.** See **Carunchio, V.**, 1354.
- Marion, A. P.** See **Thorndike, E. M.**, 2313.
- Marjanović-Krajovan, V.** See **Šoljić, Z.**, 3042, and **Turina, S.**, 2786.
- Mark, H. B., jun.** See **Eisner, U.**, 492, and **Janata, J.**, 1691.
- Markl, I.** See **Markl, P.**, 1752.



- Markl, P., Markl, I., and Hecht, F. Distribution of metal iodide complexes between inorganic acid solutions and a mixture of long-chain secondary amines, 1752.
- Marková, D. See Marek, J., 251.
- Markova, E. V., Adler, Yu. P., and Preobrazhenskaya, G. B. Development of methods of designing experiments in the USSR: review, 4.
- Marks, W. See Walisch, W., 699.
- Markyavichene, E. M. See Norkus, P. K., 1147.
- Maros, L. See Perl (née Molnar), I., 1319, 3062, and Szakács (née Pintér), M., 3085, 3087.
- Maroszyńska, K., and Lipiec, T. Colorimetric determination of L-aspartic acid  $\beta$ -hydrazide with copper<sup>II</sup> ions, 3230.
- Marquardt, P. See Classen, H. G., 3126.
- Marquardt, R. P., and Luce, E. N. Determination of vinyl unsaturation in organic compounds with mercuric acetate, 207.
- Marques de Sá, L. See Sá, L. M. de.
- Marra, R. A. See Hurwitz, A. R., 1524.
- Marshall, B. See Long, M. I. E., 422.
- Marshall, D., and Schrenk, W. G. Atomic-absorption characteristics of vanadium using the Kniesley burner, 2985.
- Martel, J. See Vioque, E., 1553.
- Marten, J. F. Development of a multiple simultaneous AutoAnalyzer system for remote monitoring of water-quality parameters, 1604.
- Martin, C. J. See Hardwick, J. L., 1412.
- Martin, E. A. Fluorescence of some pharmaceutical ethers of benzhydrol, 2698.
- Martin, E. P. See Wytenbach, A., 291.
- Martin, F. See Kaluza, G. A., 753.
- Martin, J. K. Improved flow-through counter for detecting  $\beta$ -emitting isotopes, 2848.
- Martin, J. M., and Stephen, W. I. Nephelometric determination of small amounts of sulphate ion, 641. Improved colloidal stabiliser for nephelometric determination of sulphate ion, 1229.
- Martin, L., jun. See Zieliński, W. L., jun., 996.
- Martin, R. See Côme, G. M., 222.
- Martin, R. J., and Alexander, T. G. Analytical procedures used in F.D.A. laboratories for the analysis of hallucinogenic drugs, I. Analysis of preparations containing lysergide, 1528.
- Martin, S. B. See Kilzer, F. J., 1088.
- Martinez, E. F. See Carson, N. A., 366.
- Martínez, F. B. See Bermejo Martínez, F.
- Martínez Marzal, E., and Carballido, A. Analysis of vitamins of the B group. I. Determination of individual vitamins, 1479; II. Determination of vitamins in mixtures, 1479; III. Stability of vitamins under different conditions, 1479.
- Martins, P. M., and Dick, Y. P. Detection of sugars separated by TLC: specific reaction for fucose and galacturonic acid, 1921.
- Martirosov, A. E., Talipov, Sh. T., and Dzhibanbaeva, R. Kh. Diethylamino-[3-(1-methyl-2-piperidyl)-2-pyridylazoj]phenol as reagent for absorptometric determination of nickel, 3031.
- Martsokha, V. I. See Shevchuk, I. A., 663.
- Mary, N. Y. Determination of moisture in crude natural drugs by GLC, 2127.
- Marmont, J. H., jun., Smith, J. N., and Klotzsch, S. Simple method for the determination of urine creatine, 3159.
- See also London, M., 857.
- Marzal, E. M. See Martínez Marzal, E.
- Marziona, M., and Di Modica, G. Determination of lanthionine in wool by TLC, 3104.
- Mascaró, A. See Luis, P., 1741.
- Masek, V. Atomic-absorption spectrophotometry in the analysis of petroleum, 757.
- Maslej, N. N. See Pilipenko, A. T., 3025.
- Mason, A. A., and Nielsen, A. H. Rotational spectrum of hydrogen fluoride: frequencies and line widths, 1246.
- Massarani, G. See Bonati, A., 295.
- Massaro, D. L., and Bossaert, W. Prediction of elution maxima in the gradient elution of rare-earth metals, 1802.
- Masschelein-Kleiner, L. Micro-analysis of hydroxyquinones in red lakes, 771.
- Massimo del Bianco, F. See Bianco, F. M. del.
- Massucci, M. A. See Alberti, G., 27, and Torracca, E., 27.
- Masterston, D. S., jun. Colorimetric assay for chloramphenicol using 1-naphthol, 2688.
- Masuda, E., and Ito, Y. Quantitative separation of sulphamide, the N-ammonium derivative of imidodisulphamide and trisulphimide by ion-exchange chromatography, 1230.
- Matantseva, L. K. See Navyazhskaya, E. A., 2583.
- Matat, L. M. See Mizetskaya, I. B., 2377.
- Mathies, J. C., and Lund, P. K. X-ray spectroscopy in biology and medicine. VIII. Micro- and ultra-micro procedures for the determination of calcium, phosphorus and sulphur in urinary calculi, 803.
- Mathieu, A. See Perron, R., 3364.
- Mathis, C., and Kaess, A. Examination of alkaloid-containing syrups and sugar granules by means of a chromatographic adsorbent, 1491.
- Mathur, D. L., Bhansali, G. R., and Rao, S. P. Potentiometric determination of mandelic acid and zirconium<sup>IV</sup> as mandelate with vanadium<sup>V</sup>, 245.
- Mathur, K. N. See Qureshi, M., 1112.
- Mathur, P. K., and Venkateswarlu, C. Determination of niobium in stabilised stainless steel, 668.
- Matiašovský, K. See Lubyová, Ž., 561.
- Matić, J. S., and Pešić, D. S. Spectrographic determination of trace lithium in some refractory oxides by a hollow-cathode discharge tube, 2352.
- Matocha, C. K. Preparation of aluminium powder briquettes for spectrochemical analysis, 2381.
- Matolcsy, I. Titrimetric determination of alkaloid salts with a standard anion-active solution, 2129.
- Matoušek, P. Gas chromatography of isomeric hydrocarbons, 3.
- Matrka, M. See Zvěřina, V., 1962.
- Matsubara, C. See Fukamauchi, H., 193.
- Matsuda, S. See Asada, E., 80.
- Matsui, F. See French, W. N., 2125.
- Matsui, M. See Sato, Katsuya, 1572.
- Matsumoto, T. See Miyake, H., 2270.
- Matsumoto, Y. See Kinoshita, K., 3151.
- Matthias, W., and Wagner, J. Reproducibility and value of results of paper-chromatographic analyses for amino-acids compared with corresponding column-chromatographic results, 2.
- Mattoo, B. N., and Nabar, B. S. Quantitative diffuse reflectance spectrophotometry. I. Diffuse reflectance of powder mixtures, 2735.
- Matysik, G. See Soczewiński, E., 3295.
- Mauch, W. See Tschersich, J., 372.
- Maude, B. M., and Wilkinson, K. L. Separation of small quantities of mercury from gross amounts of silver in nitric acid solution, 2906.
- Maurer, K.-H. See Brunée, C., 194.
- Maushart, R., and Piesch, E. Thermoluminescence for personal dosimetry of radiation: present knowledge and practical applications, 509.
- Maxia, V., Meloni, S., Rollier, M. A., and Valentini, M. T. Determination of trace amounts of cobalt in haemin by neutron-activation analysis, 885.

- Maxwell, M. A. B., and Williams, J. P. Purification of lipid extracts using Sephadex LH-20, 831.
- Mayer, Jan, Hlucháň, E., and Abel, E. Polarographic micro-determination of sulphate, 117.
- Mayer, Jean. See Stern, J. S., 856.
- Mayer, R. See Rosmus, P., 211.
- Mayer, V., Kovářik, M., and Fierla, R. Determination of carbon in steel, 2472.
- Mayes, P. See Aspinall, A., 2492.
- Mayrhofer, O. L. See Möhler, K., 1095, 3242.
- Mazuolo Vela, F. Determination of esterified olive oils with pancreatic lipase. II. Simplification of the method, 3256.
- Mazurek, J. See Mirek, J., 2547.
- Mazzei, M., and Lederer, M. Paper electrophoresis of metal ions in acetate buffer solutions, 22. Paper chromatography of metal ions in butanol-perchloric acid mixtures, 1742.
- Mead, T. E. See Shannon, T. W., 1678.
- Mead, W. L. See Reid, W. K., 2849.
- Meade, C. F. See Bremanis, E., 259.
- Meagher, W. R., Hendrickson, R., and Shively, B. G. Spectrophotometric determination of Temik residues in citrus materials, 1562.
- Mealor, D., and Townshend, A. Catalytic method for determination of nickel, 673.
- Mecarelli, E. See De Marco, A., 1500.
- Medes, G. See Weinstein, A., 341.
- Medvedova, Z. S. See Reshchikova, A. A., 2909.
- Meeks, S. A. See Sheppard, A. J., 1931.
- Meeren, A. A. F. van der, and Verhaar, A. L. T. GLC determination of pyridine bases without tailing effects, 3096.
- Meerov, G. I. Radio-enzymic determination of adenosine pyrophosphate, 2146.
- Mees, G. See Noifalaise, A., 1494.
- Mefferd, R. B., jun., Summers, R. M., and Fernandez, J. G. Multiple development in one dimension of thin-layer chromatograms of urinary amino-acids, 3165.
- See also Summers, R. M., 433, 3148.
- Meggos, H. N. See Firsching, F. H., 1799.
- Megroyan, R. A. See Abramyan, A. A., 3049, 3050.
- Meguro, T. See Kobayashi, Y., 1594.
- Mehdi, R. See Pillay, D. T. N., 3161.
- Mehnert, E. Determination of nitrate and nitrite in feeds, potable water and stomach contents, 401.
- Meier, W. See Braun, D., 2569.
- Meissl, A. See Brotzu, G., 2005.
- Meites, L., and Cover, R. E. Standardisation of osmium<sup>VIII</sup> solutions by potentiometric titration with chromium<sup>II</sup> sulphate, 1889.
- Mekhtiev, M. M. See Verdizade, A. A., 1168.
- Melkonyan, S. A., and Vartanyan, S. A. GLC of high-boiling but-1-en-3-yne compounds, 1315.
- Mellerup, B. Colorimetric method for rapid determination of serum arginase, 347.
- Mellinger, T. J. Spectrofluorimetric determination of 4-hydroxy-3-methoxyphenylacetic acid in urine, 3141.
- Melm, G. D. See Firsching, F. H., 1799.
- Mel'nichenko, N. N. See Rigin, V. I., 615.
- Mel'nik, P. M. See Chervinko, A. G., 3034.
- Meloan, C. E. See Beuerman, D. R., 1298, and Bunting, T. G., 2481.
- Meloni, S. See Bigliocca, C., 512, and Maxia, V., 885.
- Melton, S. See McIntyre, J. M., 1183.
- Melzacka, M. See Kahl, W., 926.
- Menaché, R., and Gaist, L. Colorimetric micro-determination of serum creatine kinase, and its clinical and biological importance, 2114.
- Menchini, G. F. See Carnicelli, A., 2055.
- Mende, A. See Ackermann, G., 101.
- Méndez, J. H. See Hernández Méndez, J.
- Mendoza, C. E., Wales, P. J., McLeod, H. A., and McKinley, W. P. Enzymic detection of ten organophosphorus pesticides and carbaryl on thin-layer chromatograms: evaluation of indoxyl, substituted indoxyl and 1-naphthyl acetates as substrates for esterases, 2219.
- See also McLeod, H. A., 1558.
- Menes, J. See Commissariat à l'Énergie Atomique, 2874.
- Menšik, P. Preparative GLC of methyl esters of fatty acids of biochemical interest, 2619.
- Mentley, A. A., and Le Roy, W. W. Identification of elastomers used in hydraulic sealing applications, 2584.
- Menzie, C. M., and Prouty, R. M. Analysis of gamma-BHC, the cyclodienes, and DDT analogues by GLC, 2217.
- Merciny, E. Separation of lanthanides and trivalent actinides on ion exchangers by (2-hydroxyethyl)-ethylenediaminetriacetic acid, 3.
- See also Schoumacher, C., 1184.
- Merisov, Yu. I. See Bludov, V. D., 599.
- Merkle, M. G. See Walter, J. P., 2742.
- Merrills, R. J., and Farrier, J. P. Chromatographic detection of catecholamines and related substances, 1449.
- Merwe, P. van der. See McMurray, W. R., 2368.
- Merz, W. Identification and determination of alkoxy-groups and of monomeric and polymeric ethylene and propylene oxides, 208.
- Mesmer, R. E. Lanthanum fluoride electrode response in aqueous chloride media, 2454.
- Mestres, R., Barthès, F., and Dudieuzère-Priu, M. Pesticide residues. XIII. Determination of organochlorine insecticides in butter and milk by extractive distillation, 956; XV. Determination of organochlorine insecticides in oil by extractive distillation, 1561; XVII. Determination of insecticides in oil by extractive distillation under reduced pressure, 1561.
- Barthès, F., Dudieuzère-Priu, M., and Campo, M. Pesticide residues. XVI. Control techniques for pesticide residues, 1561.
- Dudieuzère-Priu, M., Gaillard, J. C., and Tourte, J. Pesticide residues. XIV. Determination of biphenyl and 2-phenylphenol on citrus fruits after direct extraction, 1561.
- Metais, M. C., Hasselmann, M., and Ney, M. Identification of the vanilla aroma compounds in foods, 953.
- Metlenko, A. I. See Klug, O. N., 2987.
- Meyer, P. See Vetter, W., 338.
- Meyer, R. A. Routine calibration precision in gas chromatography, 1057.
- Meyerson, S. Supplemental measurements in probing electron impact-induced decompositions via mass spectra of labelled compounds, 2835.
- See also Albert, D. K., 1329.
- Mezonnet, R., Custot, F., Lasne, H., and Bajram, M. Insecticide residues in rice, 960.
- Mezzasoma, I., and Farina, B. Column-chromatographic separation of nucleosides and nucleotides, 2098.
- Michaëlsson, G., and Michaëlsson, M. Diazo method for determination of ascorbic acid in blood plasma, 901.
- Michaëlsson, M. See Michaëlsson, G., 901.
- Michal, J. Use of chromatographic methods in the analysis of mineral raw materials, 685.
- and Ackermann, G. Relationship between the solid and liquid phases in paper chromatography, 2.



- Michalec, Č.** Biochemistry of sphingolipids. XX. Chromatographic identification of the *erythro*-configuration of sphingosine bases isolated from human-brain sphingomyelins, 1441.
- and **Kolman, Z.** Biochemistry of sphingolipids. XIII. Effect of different hydrolytic conditions on sphingosine-base content of sphingomyelins, 1441; XVIII. Comparative paper-chromatographic study of sphingomyelins in various human-body tissues and fluids, 1441; XIX. Paper-chromatographic identification of sphingomyelins and their *N*-acyl derivatives, 1441.
- Microwave Instruments Ltd.** Improvements in apparatus for micro-wave measurement and/or control of the moisture content of powdered materials, 1669.
- Middleton, W. R.** Gradient-elution chromatography using u.v. monitors in the analytical fractionation of heavy petroleum, 1360.
- Midgett, M. R., and Fishman, M. J.** Determination of total chromium in fresh water by atomic absorption, 2228.
- Miessero, L. V.** See **Fedorovskaya, N. P.**, 3044.
- Mihai, F., Roch, B., and Moraru, A.** Dilituric acid as gravimetric reagent for caesium, ammonium ions, barium, zinc and magnesium, 1749.
- Mihalcescu, M.** Complexometric determination of lead and zinc in bronze, 49.
- Mijs, W. J.** See **Dijk, J. H. van**, 3.
- Mikaelyan, D. A.** See **Tarayan, V. M.**, 2362.
- Mikhailov, G. I.** See **Plaksin, I. N.**, 2813.
- Mikhailov, P. M.** See **Kreimer, S. E.**, 1783.
- Mikhailov, V. V., and Tarasenko, T. I.** Determination of sulphur in organophosphorus compounds with the indicator nitchromazo, 739.
- Mikhailova, E. N.** See **Ketlinskii, V. A.**, 2112.
- Mikhailovskaya, V. S.** See **Shanina, T. M.**, 204.
- Mikhno, S. D., Solunina, I. A., Devyatnin, V. A., and Berezovskii, V. M.** Determination of three isomers of glutaraldehydic acid, 3067.
- Mikler, J.** Separation of rare-earth metals by ion exchange. V. Separation and determination of dysprosium and yttrium, 2394.
- Mikolajek, E.** See **Kormicki, J.**, 2678.
- Miles Laboratories Incorporated.** Diagnostic composition for hydrolytic enzymes, 2105.
- Miletić, N.** See **Šibalić, S. M.**, 955.
- Miller, J. K.** See **Hucker, H. B.**, 2695.
- Miller, L. C.** Historical development of the U.S.P., 1.
- Miller, M., and Keyworth, D. A.** Determination of traces of organic fluorine in hydrocarbons, 761.
- Miller, S. I.** See **Gal, J.**, 1912.
- Millett, M. A.** See **Scott, R. W.**, 302.
- Mills, A. L.** See **Bober, A.**, 2491.
- Mills, P. A.** Variation of Florisil activity: measuring adsorbent capacity and standardising Florisil columns, 2255.
- Milne, J. W.** See **Durie, R. A.**, 1668.
- Milner, G. W. C.** See **Weldrick, G. J.**, 610.
- Miloserdov, P. N., Vsiakich, Yu., and Gutwasser, H.** Distillation - gas chromatographic analysis of synthetic fatty acid fractions, 258.
- Milstein, C.** See **Murray, K.**, 1456.
- Milyukova, M. S., and Savvin, S. B.** Reagents for extraction - photometric determination of plutonium<sup>IV</sup>, 85.
- Min Bak, C.** See **Chong Min Bak**.
- Minczewski, J.** See **Jaskólska, H.**, 547.
- Mingioli, E. S.** Correction factors for spectrophotometric assay of erythrocyte porphyrins, 2093.
- Minister of Power [U.K.].** Apparatus for detecting gases, 1616.
- Mioşcu, M.** See **Liteanu, C.**, 3344.
- Miranskii, I. A.** See **Gureev, E. S.**, 1260.
- Mirek, J., and Mazurek, J.** Aroyl isothiocyanates as reagents for indolizines. III, 2547.
- Mironov, G. A.** See **Golovnya, R. V.**, 229, 1541.
- Miroshnikov, V. S.** See **Gureev, E. S.**, 1260.
- Mirovich, L. V.** Determination of the main components of semiconductors of the zinc - indium - sulphur type, 2865.
- Mirza, M. Y.** Carrier-free separation of indium-115m from irradiated cadmium by solvent extraction with 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 1798. Liquid - liquid extraction methods for the production of carrier-free cadmium-115 and strontium-89 - strontium-90 from fission products, 2901. Carrier-free production of yttrium-90 from strontium-90 - yttrium-90 mixture and strontium-89 from neutron-irradiated yttria, 2921.
- Mirzoyan, N. A.** See **Elinson, S. V.**, 2437.
- Misarwala, K. H.** See **Gandhi, S. B.**, 3237.
- Mishchenko, V. A.** See **Kryukov, A. I.**, 2507.
- Mishra, D. D., and Shapag, J. K.** Trivalent cobalt as oxidising reagent for volumetric estimations, 2859.
- Misra, G. J., and Tandon, J. P.** Studies on copper<sup>I</sup> compounds: titrimetric determination of copper<sup>I</sup> chloride with potassium iodate, periodate, hypochlorite, hypobromite, chloramine T and bromine chloride, 566. Gravimetric determination of selenium and tellurium using copper<sup>I</sup> chloride as reducing agent, 642.
- Missala, I., and Czulińska, D.** Analytical methods for some pyridazine derivatives. I. Titrimetric determination of the sum of 5-amino-4-chloro-2-phenylpyridazin-3-one and its isomer 4-amino-5-chloro-2-phenylpyridazin-3-one in technical products, 3267.
- Mital, R. L.** See **Chandra, D.**, 252.
- Mitchell, B. D.** See **Yariv, S.**, 523.
- Mitchell, D. T.** See **Jankovic, S. G.**, 1607.
- Mitchell, F. L.** See **Broughton, P. M. G.**, 2585, and **Shackleton, C. H. L.**, 2061.
- Mitchell, T. H., Ruzicka, J. H. A., Thomson, J., and Wheals, B. B.** Chromatographic determination of organophosphorus pesticides. III. Effect of irradiation on the parent compounds, 2218.
- See also **Askew, J.**, 2721.
- Mitchell, W. D., and Diver, M. J.** Analysis of faecal neutral steroids and bile acids in humans on constant-fat diet, 841.
- Mitchner, H., and Jennings, E. C., jun.** Modified Hofmann degradation for analysis of *n*-alkylbenzyltrimethylammonium chlorides by gas chromatography. II. Benzalkonium chloride, 2156.
- See also **Jennings, E. C., jun.**, 2156.
- Mitooka, M.** See **Miyake, H.**, 2270.
- Mitra, G. D., Ghosh, S. K., Saha, N. C., and Sinha, A.** Gas-chromatographic separation of low-boiling pyridines on liquid-coated silica gel columns, 1945.
- Mitsuji, T.** Chemistry of protactinium. V. Separation of protactinium<sup>IV</sup> and protactinium<sup>V</sup> by co-precipitation with thorium fluoride, 1810.
- Mittal, M. L., and Saxena, R. S.** Polarography of thallium<sup>I</sup> at the dropping-mercury electrode in different electrolytes: determination of thallium<sup>I</sup> in presence of molybdenum<sup>VI</sup>, tungsten<sup>VI</sup> and vanadium<sup>V</sup>, 1171. Polarography of molybdenum<sup>VI</sup> at the dropping-mercury electrode in media of different organic acids, 2448.
- Mittelholzer, M. L.** See **Birgi, W.**, 2028.
- Mittler, A.** See **Beckman, H. F.**, 1557.



- Mitzner, B. M., Mancini, V. J., Lemberg, S., and Theimer, E. T. Infra-red spectra of mono-terpenes and related compounds. II. Terpene alcohols, 2544.
- Miyahara, T. See Iritani, N., 1532.
- Miyake, H., Mitooka, M., and Matsumoto, T. Adsorptive properties of terephthalic acid in relation to its use as a solid support in GLC, 2270.
- Miyamoto, M. See Tōei, K., 1734.
- Miyashita, H. See Mutō, G., 487.
- Mizany, A. I. Determination of residues of branched decanoic acids in the presence of naturally occurring carboxylic acids by TLC, 985.
- Mizetskaya, I. B., Matat, L. M., and Raevskaya, L. N. Determination of certain trace impurities in single-crystal semiconductors of the cadmium sulphide type, 2377.
- Młodecka, J., and Sekowska, B. Detection of nicotinic acid and its amide in nicotinonitrile and of isonicotinic acid and its amide in isonicotinonitrile by TLC, 3185.
- Moauero, A. Determination of manganese-54 and iron in irradiated steel: application of a lithium-drifted germanium detector, 160.
- Moharab, M. A. See Brody, J. I., 1076.
- Moberg, S. See Friedner, S., 2044.
- Möbius, H.-H. See Hartung, N., 1762.
- Mochalov, K. N., and Tremasov, N. V. Determination of iron by using nickel 'boride', 1261.
- Mochel, V. D. NMR analysis of copolymers, 1981.
- Moczar, E., Moczar, M., Schillinger, G., and Robert, L. TLC micro-determination of neutral sugars and amino-sugars in glycopeptides, 1459.
- Moczar, M. See Moczar, E., 1459.
- Moeken, H. H. P., and Neste, W. A. H. van. Simultaneous determination of hydroxyl and aluminium in aluminate and basic aluminium nitrate solutions, 591.
- Moellering, H., and Bergmeyer, H. U. Enzymic determination of D-gluconic acid in foodstuffs, 978.
- Mohadjer, K. See Guillemaut, A., 89.
- Mohai, M., and Upor, E. Analytical applications of alkyl phosphates. III. Spectrophotometric determination of cerium in rocks after extraction with dibutyl phosphate, 1181.
- Möhler, K., and Mayrhofer, O. L. Integration of gas-chromatographic fractionation with TLC, 1095. Detection and determination of nitrosamines in foods, 3242.
- Möhlmann, G. See Kahsnitz, R., 1366.
- Mohnke, M., Piringer, O., and Tataru, E. Analysis of isotope molecules of hydrogen using capillary columns and an electrolytic conductivity detector, 2349.
- Mohr, K.-H., and Wolf, F. Potentiometric titration of phenols in the presence of ethylene oxide adducts, 1345.
- Mohr, U. H. See Raible, K., 975.
- Mokhnachev, I. G., Kovtunov, V. S., and Kamenshchikova, S. V. Reaction GLC of carbonyl compounds, 1326.
- Mokrošová, H. See Kapišinská, V., 2534.
- Mokrousov, P. V., Mokrousova, I. Ya., and Ioffe, I. I. GLC determination of aromatic acids during control of the production of caprolactam from toluene, 269.
- Mokrousova, I. Ya. See Mokrousov, P. V., 269.
- Molino, G. See Gaidano, G., 2637.
- Molitor, J. C. Determination of 1-phenylazo-2-naphthol in D. & C. Red No. 17, 263.
- Molle, L. See Hanocq, M., 1861.
- Molnár, I. See Perl (née Molnár), I.
- Moltoni, E. See Bozzola, A., 3027.
- Molyneux, P. Separating vessel for isolation of viscous sediments, particularly applicable to the fractionation of polymers, 2244.
- Mon, T. R., Forrey, R. R., and Teranishi, R. Effects of addition of adsorption-reducing material with open-tubular and packed-column gas chromatography, 442.
- Monekosso, G. L., Jantjie, V. V., and Williams, H. Starch-iodic acid paper for predicting plasma thiocyanate concentrations: screening test for chronic cyanide exposure, 2001.
- Monica, E. S. D. See Della Monica, E. S., 2714.
- Monjardino, J. P. Simple TLC method for base-ratio analysis of small samples of RNA, 897.
- Monkman, J. L. See Dubois, L., 2224.
- Monn, D. E. See Jordan, D. E., 575.
- Monnier, D., Gross, P., and Haerdi, W. Separation of traces of bismuth by redox reaction on metallic mercury, 3.
- See also Buffle, J., 1868, Daniel, R., 760, Gross, P., 1095, and Haerdi, W., 3, 2419.
- Monnier, R. See Duruz, J. J., 1796.
- Monsanto Co. Programmed-temperature GLC apparatus, 3302.
- Monstein, S. See Bürgi, W., 2028.
- Montagut Buscás, M. See García-Ramos, L. A., 3363.
- Monte-Bovi, A. J. See Tuesley, S. P., 3191.
- Montford, B. X-ray spectroscopic determination of metals in cooling water for the Canadian boiling light-water reactor, 2766.
- Mooney, R. P., and Pasarella, N. R. Determination of chlorocholine chloride residues in wheat grain, straw and green wheat foliage, 991.
- Moore, F. L. Separation of berkelium<sup>IV</sup> from cerium<sup>IV</sup> by anion exchange, 1185.
- Moore, J. J. See Sax, S. M., 280.
- Moore, R. E. See Warren, R. W., 2542.
- Moore, R. L. See Kawahara, F. K., 2233.
- Moore, W. E. See Scott, R. W., 302.
- Moore, G. E. See Emery, A. E. H., 2108.
- Moraes, E. de C. F. See Szelwar, R. B., 1452.
- Morales B., A., González V., F., and Díaz, C. Oscillo-polarographic detection and determination of vanadate, 109.
- Morales-Malva, J. A., Israel-Budnick, S., Sapag-Hagar, M., and Vallega-Magasich, A. Chromatographic and electrophoretic studies on periodic acid - Schiff-positive components of serum macroglobulins, 886.
- Morán, L. L. See León Morán, L.
- Moraru, A. See Mihai, F., 1749.
- Moreno, L. S. See Sánchez Moreno, L.
- Moreton-Smith, M. J. See Perkins, R., 1200.
- Moretti, J. See Nicot, C., 1460.
- Moretti, S. See Ferro, C., 2936.
- Morgan, H. W. See Staats, P. A., 1652.
- Morgan, J. W., and Lovering, J. F. Determination of rhenium and osmium abundances in chondritic meteorites, 659.
- Morgen, E. A., and Vlasov, N. A. Photometric determination of ions unavoidably present in the liquid phase of flotation pulps, 2486.
- Mori, A. See Maltese, P., 777.
- Mori, H. See Ishii, D., 198.
- Mori, I. Separation of strontium-90 from yttrium-90, and of lead-212 from bismuth-212, by thin-layer electrophoresis, 1121.
- Mori, Saburō, Hirata, H., and Tōnooka, N. Chelometric titration of iron<sup>III</sup> and iron<sup>IV</sup> in barium orthoferrate, 1263.
- Mori, Shiro. See Evans, H. B., 1814.

- Iorimoto, M., Hirakoba, A., and Ishibashi, R. Spectrophotometric determination of nitrate in the presence of nitrite, 1203.
- Iorishige, K. See Nishikawa, Y., 74.
- Iorita, Y., and Kogure, Y. Analysis of organic nitrogen compounds. IX. Reaction between a trace of nitric acid and salicylic acid in concentrated sulphuric acid medium: application to u.v. spectrophotometric determination of nitric acid and nitric esters, 1335.
- Iorito, M. See Kambe, M., 537.
- Iorley, H. V. See Chiba, M., 2206.
- Iorman, D. H., and Harlow, G. A. Sulpholans as solvents for potentiometric titrations, 1693.
- Ioroshkina, T. M. Improvement in the sensitivity of the spectrographic determination of trace impurities in refractory bases, 2340.
- Iorozova, O. V. See Stepin, V. V., 1258.
- Ioriz, D. F. C. See Khan, Mohammad A., 1882.
- Iorris, G. F., Carson, R. B., Shearer, D. A., and Jopkiewicz, W. T. Comparison of the automated Dumas and Kjeldahl determinations of total nitrogen in agricultural materials, 2205.
- Iorris, L. J., Wharry, D. M., and Hammond, E. W. Chromatographic behaviour of isomeric long-chain aliphatic compounds. II. Argentation TLC of isomeric octadecenoates, 731.
- Iorris, M. D. See Orenberg, J. B., 1252.
- Iorrison, G. H. See Skogerboe, R. K., 288, 2296.
- Iorrison, J. I. GLC for measuring pungency in capsicum spices, 380.
- Iortensen, J. V. See Larsen, I., 1469.
- Iöschter, E. See Blasius, E., 3.
- Ioshy, B. J. See Jacin, H., 823.
- Ioss, A. M. See Horning, M. G., 2633, 3158.
- Ioss, D. W. See Miles Laboratories Incorporated, 2105.
- Ioss, U. R. See Strong, A. B., 2166.
- Iostyn, R. A. See Hoare, H. C., 3328.
- Iotajima, K., Bando, Shoji, and Tamura, N. Determination of radioactive cobalt in reactor-cooling water by solvent extraction, 420.
- Ioshi, O., and Tamura, N. [Annual review, 1967]—Atomic-reactor materials, 1734.
- Iotz, R. J. Critical evaluation of the A.O.A.C. determination of milk protein in milk chocolate when applied to crumb-process chocolate, 2707.
- Iovsisyan, F. A. See Isayan, G. A., 2575.
- Iowszowicz, I. See Dray, F., 2056.
- Ioye, H. A. Microwave-excited emission gas-chromatography detector for pesticide residue analysis, 388.
- Iozheiko, L. N. See Jaunzems, V., 2538.
- Iuchová, A., and Jokl, V. TLC of inorganic ions. I. Separation of cations with chelating agents, 2339.
- Iudd, S. H. Determination of sulphite in biological fluids: utility of radioactive N-ethylmaleimide, 2596.
- Iueller, R. M., and White, W. Direct gravimetric calibration of a quartz-crystal microbalance, 3288.
- Iügler-Chavan, F., and Reymond, D. Determination of aromatic constituents of cacao from various sources, 1095.
- Iühlemann, H., and Tatrai, O. Evaluation of anthraquinone drugs and their preparations, 2686.
- Iukai, K. See Hattori, T., 1734.
- Iukerjee, D. See Gupta, S. S., 35, 1748.
- Iukerji, J. See Biswas, S. R., 2479.
- Iukherjee, S. N., Dutta, P., and Dutta, P. B. Determination of sulphur and nitrogen in coal and coke, 2490.
- Mukherji, A. K. Determination of calcium, zinc and oxalate with an ion-exchange electrode, 2898.
- Mukherji, S. P. See Vadodaria, D. J., 3232.
- Mulé, A. See Crotte, C., 1040.
- Müller, E. W., Panitz, J. A., and McLane, S. B. Atom-probe field ion microscope, 2314.
- Müller, Karl. Detection and determination of poly(vinylpyrrolidone) and determination of drugs in pharmaceutical preparations containing it, 3238.
- Müller, Klaus. See Paesold, G., 37.
- Müller, Kurt. See Illasiewicz, A., 2332.
- Müller, L. See Kuhnert-Brandstatter, M., 3367.
- Müller, M. See Curtius, H.-C., 840, 2051.
- Müller, O. See Krankowsky, D., 179.
- Müller, R. H. Biological and industrial research uses of continuous electrophoretic fractionation of particle mixtures, 1728.
- Mulvey, T. Choice of models for electron scattering and deceleration for electron-probe microanalysis, 1097.
- Muminova, M. F. See Gureev, E. S., 1260.
- Munari, S. See Castello, G., 712.
- Mundschenk, H. Extraction of uroporphyrin with tributyl phosphate on a solid filter aid, 1467.
- Munier, R. L. Chromatography and electrophoresis on thin layers, 3.
- Thommegay, C., and Sarrazin, G. Systematic analysis of mixtures of amino-acids by chromatography and chromatography-electrophoresis on thin layers of cellulose powder, 866.
- Munnik, J., and Fabrie, C. C. M. Influence of overlapping of peaks on the accuracy of gas-chromatographic analyses, 3.
- Munro, I. H., and Ramsay, I. A. Instrumental response-time corrections in fluorescence-decay measurement, 2822.
- Munshi, K. N. See Joshi, A. P., 1166.
- Murad, E. See Boyer, M. H., 2311.
- Muradade, F. I. See Shakhtakhtinskii, G. B., 3018.
- Muraine, J. See Jensen, R., 938.
- Murakami, M., Yoshino, T., and Harasawa, S. Separation and acid equilibria of xylenol orange and semi-xylenol orange, 536.
- Murakami, T., and Uesugi, K. Flame-photometric determination of rubidium in sea-water, 417.
- Muralikrishna, U., and Rao, G. G. Potassium dichromate in a strong phosphoric acid medium as oxidimetric reagent. VIII. Potentiometric titration of molybdenum<sup>VI</sup> and vanadium<sup>V</sup>, 1858.
- Murashova, V. I., Bakunina, L. I., and Sushkova, S. G. Absorptiometric determination of tellurium, 2996.
- See also Stepin, V. V., 2994, and Sushkova, S. G., 1233.
- Murata, H., and Wada, T. Fluorimetric method for the estimation of 1-benzylcycloheptimidazol-2-one, 2014.
- Murata, K. See Shinoda, G., 1097.
- Murdock, K. J. See Hess, J. W., 908.
- Muroi, K., Ogawa, K., and Ishii, Y. Karl Fischer titration of water in substances containing active chlorine, 713.
- Murphy, J. P. F. See Katchman, B. J., 332.
- Murray, D. A. See Levy, R. L., 2790.
- Murray, J. F., jun. See Grasseti, D. R., 706, 1458.
- Murray, K., and Milstein, C. Esters of serine and threonine in hydrolysates of histones and protamines, and attendant errors in amino-acid analyses of proteins, 1456.
- Murray, M., and Smith, G. F. Infra-red spectra of microgram amounts of amino-acid phenylthiohydantoins extracted from thin layers of silica gel, 2645.



- Murray, R. W., Heineman, W. R., and O'Dom, G. W. Optically transparent thin-layer electrochemical cell, 490.
- and McNeely, R. L. Electrochemical masking with an adsorbed metal complex: determination of silver-mercury mixtures, 50.
- Murthy, B. G. K., Samban, M. A. S., and Aggarwal, J. S. Chromatographic identification of naturally occurring alkyl-substituted phenols in cashewnut shell liquid, 3117.
- Musha, S. See Ito, Mitsuo [Sakai, Japan], 421.
- Mushak, P. See Savory, J., 2609.
- Musil, F. See Stajner, A., 3140.
- Mustafin, I. S., and Shchukina, V. S. Organic reagents in analytical chemistry of zirconium and hafnium. II. Photometric determination of zirconium with galloyanine MS, 2963.
- Mutō, G., Miyashita, H., and Takata, Y. Application of a dipping colorimeter, 487.
- Muto, H. See Fujii, I., 671.
- Muto, M. See Yoneda, H., 163.
- Mutter, M., Galen, G. W. van, and Hendrikse, P. W. Analysis of surfactants. I. Analysis of fatty acid monoethanolamide foam stabiliser, 3099; II. Analysis of fatty acid monoethanolamide-ethylene oxide condensate non-ionic surfactant, 3099.
- Muzzarelli, R. A. A., Marcotrigiano, G., Liu, C.-S., and Frêche, A. Rate of adsorption of zinc or cobalt ions on natural and substituted celluloses, 1154.
- Myagchenkov, V. A., Kurenkov, V. F., Dushechkin, A. V., and Kuznetsov, E. V. Simultaneous polarographic determination of acrylamide and salts of unsaturated dicarboxylic acids, 2574.
- Myshlyayeva, L. V., and Sedova, I. V. Extraction-conductimetric determination of silicon, 2941.
- Myunks, M. Effect of spectrographic excitation parameters on sensitivity of determining impurities in high-purity selenium, 2444.
- N**
- Nabar, B. S. See Mattoo, B. N., 2735.
- Nadezhkina, L. S., Grinzaid, E. L., Denisov, E. I., and Bespalenkova, E. K. Determination of oxygen in thin layers of stibnite dust, 2978.
- See also Denisov, E. I., 631.
- Nadler, H. L. See Inouye, T., 2668.
- Nagasawa, Kakuma. Necessity of international co-operation in preparing reference standards for drug assay, 1.
- Nagasawa, Kazuhiko, and Ohta, K. TLC identification of organic chemicals in vulcanised rubber, 1397.
- Nagashima, R., Levy, G., and Nelson, E. Comparative pharmacokinetics of coumarin antiagulants. I. Unusual interaction of dicoumarol with plasma proteins: development of an assay, 2019.
- Nagayama, M. See Yotsuyanagi, T., 1013, 1794.
- Nagel, C. W., and Hasegawa, S. Enzymic determination of galacturonic acid, 1429.
- Nagel, D. Absorption-edge effects in electron-probe analysis, 1097.
- Naidenov, B. M. See Bazhov, A. S., 564.
- Nair, C. G. R. See Jacob, T. J., 239.
- Nakagawa, G. See Nomura, Tsuyoshi, 1118, 1152.
- Nakagawa, H. M. See Ward, F. N., 184.
- Nakahara, K. See Tōei, K., 1734.
- Nakajima, M. See Ueno, T., 305.
- Nakajima, T., Kawaguchi, H., Takashima, K., and Fukushima, H. [Annual review, 1967]—Emission spectroscopy, 1734.
- Nakajima, Y., Gotoh, K., and Tanaka, T. On-line particle size analyser, 527.
- Nakashima, M. See Osajima, Y., 1536.
- Nalbantoglu, M. See Cherrier, C., 68.
- Nambara, T., Kudo, T., Hosoda, H., and Goya, S. Analytical studies on steroids. XIV. GLC determination of 13-epimeric 17-oxosteroids, 841.
- Kudo, T., Hosoda, H., Yamanouchi, K., and Goya, S. Analytical studies on steroids. XV. Steroid-number contribution for epimeric androstanes, 1443.
- Nangniot, P. Polarographic determination of trace elements in biological material, foodstuffs, plant and water, 1990.
- Napoli, A. Study of the system aluminium<sup>III</sup>-dipicolinic acid in aqueous semi-molar sodium perchlorate medium, 2911.
- Narbut, K. I., and Losev, N. F. Development of X-ray spectrographic analysis in the Soviet Union: review, 4.
- Nash, C. W. See Barton, H. J., 1301.
- Nassiff, S. J. See Carrillo, L., 646.
- Natarajan, S. R. See Lalitha, K. S., 1779.
- Nathan, D. G. See Schwartz, E., 1468.
- Natho, G. J. W. See Hess, J. W., 908.
- National Research Development Corporation. Apparatus for detecting the presence of at least one specified gas, 1026. Determination of dextrin-1,6-glucosidase, 2673.
- Naumann, R. Potential-sweep chronoamperometric determination and spectrometric characterisation of  $\alpha$ -unsaturated ketones in isobutyrmethyl ketone, 1328.
- and Schmidt, W. Cathode-ray polarographic determination of traces of cobalt and zinc in nickel and nickel salts, 3036.
- Navyazhskaya, E. A., Matantseva, L. K., Pavlova, Z. N., and Bratchikova, N. I. Titrimetric determination of mono-metallic siccatives, 2583.
- Nazarenko, V. A., and Ermak, L. D. Alkalimetric determination of boric acid as complexes with polyhydric compounds, 2908.
- and Poluéktova, E. N. Determination of germanium with 6,7-dihydroxy-2H,3H-benzofuran-3-one, 614.
- See also Liam-Ngoc-Thu, 2916, and Poluéktova, E. N., 130.
- Nazário, W. See Sá, L. M. de, 1424.
- Nazarova, M. G. See Solodovnik, S. M., 1838.
- Nazarova, T. F. See Zakhariya, N. F., 2413.
- Neal, P. Clean-up method for detection of cholesteraemia factor in fats and fatty acids by gas chromatography, 1575.
- Nebeser, B. Excitation of liquid-liquid extraction residues in a d.c. arc, 544. Direct-current arc spectrochemical determination of rhenium in molybdenite ores, 656. Short-circuiting technique for breaking down large analytical gaps in d.c. arc spectroscopy, 2291.
- Nedbálková, J. See Příbyl, M., 732.
- Nedler, V. V. See Britske, M. É., 4.
- Nedol'sina, N. P. See Polivanova, N. G., 2970.
- Negina, V. R., Koz'yeva, E. A., Balakshina, A. V., and Chikisheva, L. S. Potentiometric determination of boron in the presence of several metals in an oxidising medium, 2907.
- Negrebetskaya, I. V. See D'yachenko, N. P., 2884.
- Nekrashevich, I. G. See Plashchinskaya, R. V., 45.
- Nellist, D. R. See Janus, J. W., 1398.
- Nelson, D. M. See Brar, S. S., 518.
- Nelson, E. See Nagashima, R., 2019.
- Nelson, G. J. Differentiation of nitrogenous phospholipids by infra-red absorption between 9 and 11  $\mu$ m, 2047.



- elson, K. H. See Lysyj, I., 2495.  
 ěmec, I. See Tolar, V., 145.  
 emeth, I. See Hala, L., 2222.  
 emets, V. M. See Borisov, V. P., 1269.  
 emodruk, A. A., and Bezrogova, E. V. Photochemical reactions in analytical chemistry. III. Determination of traces of uranium by photochemical reduction of uranium<sup>VI</sup> to uranium<sup>IV</sup>, 607.  
 emtsov, M. S. See Levina, N. S., 3120.  
 eparent, B. S., Kiseleva, M. S., Makogonenko, A. G., and Shlyakhov, V. I. Determination of moisture in the atmosphere from absorption of solar radiation, 483.  
 erlo, H., Czarnecki, W., and Polowianiuk, E. TLC detection of tocopherol in wheat germ, grain and bran, 3261.  
 este, W. A. H. van. See Moeken, H. H. P., 591.  
 estle, M., and Roberts, W. K. Separation of ribonucleosides and ribonucleotides by one-dimensional paper chromatography, 2657.  
 etwal, J. C. See Sonders, R. C., 2187.  
 euhoff, V. Micro-disc electrophoresis of brain proteins, 2650.  
 eurath, G., and Lüttich, W. GLC separation of (4-nitrophenylazo)benzoyl derivatives of primary and secondary amines, 1096.  
 and Wichern, H. Occurrence of bicyclohexyl and of the C<sub>13</sub> to C<sub>15</sub> n-alkanes in tobacco, 824.  
 euzil, E., and Cassaigne, A. Paper chromatography of aminoalkylphosphonic acids, 862.  
 ewell, B. S. Determination of ammonia in seawater, 2765.  
 ewell, H. A. See Hill, D. W., 3309.  
 ewfield, O. E. Determination of calcium in serum and urine with use of hydroxy naphthol blue as complexometric indicator, 801.  
 ewland, B. T. N. See Hoare, H. C., 3328.  
 ewman, D. S. See Gruen, D. M., 2827.  
 ewman, E. J. See Cartwright, P. F. S., 541.  
 ew York Society for Paint Technology. Application of gas chromatography to the analysis of coating solvents, 1980.  
 ey, K. H. Detection of egg-white in commercial liquid egg-yolk, 947.  
 ey, M. See Metais, M. C., 953.  
 ey, W. See Parus, J., 3353.  
 guyen Thi Ban. See Struhár, M., 1502.  
 guyen Van Thoai. See Robin, Y., 854.  
 iazullah, M., Chandran, D. V., Chandhok, Y. M., and Bhatnagar, R. K. Study of enrichment of castor oil monoglycerides, 783.  
 ichiporuk, W., Chodos, A., Helin, E., and Brown, H. Determination of iron, nickel, cobalt, calcium, chromium and manganese in stony meteorites by X-ray fluorescence, 688.  
 ickerson, G. B. See Likens, S. T., 965.  
 ickless, G. Chromatographic techniques in inorganic chemistry: review, 13.  
 - See also Anderson, R. G., 532, 1102, 1738.  
 iclaude, M. See Góme, G. M., 222.  
 iot, C., Cheftel, R.-I., and Moretti, J. Determination of the molar ratio of galactose to mannose in glycoproteins by TLC on cellulose, 1460.  
 iec, A. See Bianchine, J. R., 1420.  
 ief, G. See Chenouard, J., 1815.  
 iehaus, W. G., jun. See Hamberg, M., 2035.  
 ielsen, A. H. See Mason, A. A., 1246.  
 ielsen, E., and Asfeldt, V. H. Specificity of fluorimetric determination of plasma corticosteroids by the method of Moor and Steeno, 849.  
 ietrich, F., and Prescher, K.-E. Photometric determination of nitrogen dioxide, 2424.  
 Niewodniczański, J., Sulin, V. V., and Vitozhents, G. Ch. Determination of zinc in lead - zinc ores by photon-activation analysis, 2374.  
 Nigam, R. C. Rapid volumetric determination of magnesium in limestone, dolomite and magnesite, 2893.  
 Nikitin, E. K. See Gaivoronskaya, I. Ya., 253.  
 Nikitina, O. I., and Gorevaya, A. E. Use of reduced pressure for improving the sensitivity of the spectrographic determination of boron and cerium in steel, 2467.  
 — and Ivanova, N. K. Spectrographic determination of lanthanum and yttrium in steel, 2469.  
 Nikkilä, O. E. See Kiesvaara, M., 1574.  
 Nikokavouras, J. See Bersis, D. S., 3321.  
 Nikolaev, Yu. M. See Golutvina, M. M., 1403.  
 Nikolaeva, E. R. See Agasyan, L. E., 643, 1234, 2442.  
 Nikol'skaya, O. N. Determination of fatty acids in blood serum, 2033.  
 Nin'o, N. Determination of atropine in aluminium hydroxide - belladonna tablets, 353. Spectrophotometric determination of strychnine nitrate in a preparation also containing sodium methylarsinate, 2683.  
 Nishida, H. See Horiuchi, Y., 140, 682, 1167.  
 Nishikawa, T. See Yamamoto, O., 1734.  
 Nishikawa, Y., Hiraki, K., Morishige, K., and Shigematsu, T. Fluorimetric determination of aluminium and gallium with lumogallion, 74.  
 Nishimura, K., and Imai, T. Determination of magnesium by atomic-absorption spectrophotometry: application to the analysis of high-purity metals, 56.  
 Nistor, R. See Weissman, I., 61.  
 Nixon, J. C. See Fisher, C. L., 2110.  
 Nixon, P. F. See Hilcoat, B. L., 905.  
 Nobbe, V. See Grüne, A., 1552.  
 Nobori, Y. See Yamamoto, Yuroku, 1551.  
 Nobuoka, M. See Ichida, T., 2654.  
 Noda, K., Okai, H., Kato, Tetsuo, and Izumiya, N. Studies on separation of amino-acids and related compounds. III. Separation of diastereomers of leucyl dipeptides by ion-exchange chromatography, 3174.  
 Nohe, J. D. Emission-spectrographic analysis of tantalum thin films, 1217.  
 Noirfalise, A., Grosjean, M. H., and Creppe, M. L. TLC separation of psychomimetic amines, 1096.  
 — and Mees, G. TLC of alkaloids and amine bases, 1494.  
 Nolte, C. R. See Strelow, F. W. E., 1784.  
 Nomura, K. See Oka, Y., 3039.  
 Nomura, N. S. See Frei, R. W., 994.  
 Nomura, Toshiaki. See Komatsu, Sumio, 1256.  
 Nomura, Tsuyoshi, and Nakagawa, G. Potentiometric chelatometric titration with a manganese dioxide indicator-electrode, 1118. Chelatometric determination of calcium in the presence of magnesium by potentiometry with a silver indicator-electrode, 1152.  
 Nonaka, A. Adsorption gas chromatography with water vapour as carrier gas for determination of organic compounds containing oxygen, 1317.  
 Noravyan, A. S. See Vartanyan, S. A., 1353.  
 Nordschow, C. D., and Tammes, A. R. Auto-Analyzer determination of hydrogen peroxide by use of a xylenol orange - titanium system, 2588.  
 Nordström, C. G. Separation of polyphenolic glycosides by gel chromatography, 1430.  
 Norén, K. Determination of aldrin residues in vegetables, 2194.  
 Noriega, F. F. See Fernández Noriega, F.

- Norkus, P. K., and Markyavichene, R. M. Hypophosphite and phosphite in analytical chemistry. I. Titrimetric determination of copper, 1147.
- Norman, D. A. See Chantler, C., 1427.
- Norman, J. C., and Haskin, L. A. Neutron-activation determination of scandium and iron in rock samples, 2392.
- Northcote, D. H. See Stoddart, R. W., 307.
- Norwitz, G., and Gordon, H. Conductimetric determination of graphite in propellants, 1401.
- Noske, R. See Voigt, J., 3246.
- Noskov, V. V. See Andreikova, L. G., 3077.
- Nováček, V. See Frič, I., 1682.
- Novák, Jiri. Identification of aliphatic monoglycidyl ethers, 221. Paper chromatography of aliphatic 3-chloro-2-hydroxypropyl ethers, 716.
- Novák, Josef. See Dobiašova, L., 1250; Hejduk, J., 2914, and Zemanová, D., 2357.
- Nover, L., Baumgarten, G., and Luckner, M. Relationships between structure and chromatographic behaviour of cardiac glycosides. I. Paper-chromatographic examination of the glycosides and their aglycones, 2136; II. Application of the  $R_M$  value theory to cardiac glycosides and their aglycones, 2136; III. Influence of the carbohydrate moiety on chromatographic behaviour, 2136.
- Novikov, E. G. See Kondratov, V. K., 2554.
- Novikov, N. I. See Andreikova, L. G., 3077.
- Novikova, E. V. See Stepin, V. V., 2994.
- Novikova, N. Ya. See Golutvina, M. M., 1403.
- Novozhilova, I. V. See Lebedeva, A. I., 701.
- Novozhilova, K. I., and Gel'man, N. É. Separation of fluorine by pyrohydrolysis during simultaneous micro-determination of carbon, hydrogen and fluorine in organic compounds, 1296.
- Nowaczynski, W., Silah, J., and Genest, J. Determination of aldosterone in human peripheral plasma by double-isotope derivative assay: application to measurement of secretory rate and urinary excretion, 843.
- Nowakowska, Z. See Danieliak, R., 3217.
- Nowicka, E. See Szczepaniak, A., 3163.
- Nozaki, T., and Koshiha, K. Determination of the composition and formation constants of aminopolycarboxylate complexes of bismuth by ultraviolet spectrophotometry, 1840.
- Nunley, C. E. See Anderson, N. G., 1034, and Chandler, E. L., 1034.
- Nunn, C. J. Determination of the solvent composition of electro-deposition paint: tentative method, 2582.
- Nunn, H. B. See Johnson, D. E., 2718.
- Nunnikhoven, R. Flame ionisation detector with high output, 3.
- Nuttall, R. H. Characteristic metal-halogen vibrational frequencies of complexes with bivalent metal halides, 2863.
- Nyhan, W. L. See Sweetman, L., 3182.
- O'Dom, G. W. See Murray, R. W., 490.
- Oehler, E. See Lindner, R., 2747.
- Oehme, F. Direct potentiometric determination of concentration in clinical analysis, 794.
- Oesterling, T. O., and Olson, C. L. Mercury coated tubular platinum electrode, 499. Chronoamperometry at tubular mercury-film electrode, 502.
- Oette, K., and Doss, M. Micro-methods for rapid trans-esterification of lipids on thin-layer plate with sodium methoxide for GLC analysis of fatty acid methyl esters, 3147.
- Offner, K. M. See Katchman, B. J., 332.
- Ogahara, I. See Kamada, H., 1276.
- Oganезov, K. A., Chikhladze, B. Ya., and Shvangiradze, R. R. Spectrographic isotopic analysis with a hollow cathode, for oxygen in metals, 2328. — See also Shvangiradze, R. R., 1225.
- Ogawa, K. See Muroi, K., 713.
- Ogorzałek, A. Determination of water in some organic compounds with van der Meulen reagent, 3052.
- O'Grady, J. E. Determination of oestradiol and oestrone in the plasma of the domestic fowl by the use of labelled derivatives, 2636.
- Oguma, K. See Ikeda, N., 1122.
- O'Hagan, J. E. Recording potentiometric-spectrophotometric titrator, 1695.
- Ohashi, S. See Takashima, Y., 2485.
- Ohta, K. See Nagasawa, Kazuhiko, 1397.
- Ohagi, Y. [Annual review, 1967]—Atomic absorption spectrophotometry and flame spectrophotometry, 1734.
- Oka, Y., Kato, Toyooki, Ysai, H.-T., and Nomura, K. Internal-monitor method for activation analysis for silver in palladium with thermal neutrons, 3039.
- Okáč, A. See Horák, J., 2407.
- Okai, H. See Noda, K., 3174.
- Okamoto, N. See Yamamoto, Yuroku, 43.
- Okimura, I. See Yamamoto, Yuroku, 52, 175, 244.
- Okuda, K. X-ray fluorescence analysis of ferrous alloys. I. Crushing method, 1266.
- Okun', A. E., and Fomenko, L. D. Absorptometric determination of scandium in an yttrium salt with methylthymol blue, 2920.
- Okuno, I., Latham, D. R., and Haines, W. F. Separation of sulphoxides from petroleum fractions by cation-exchange-resin chromatography, 1362.
- Okutani, T., Ito, S., and Utsumi, S. Ultra-violet spectrophotometry of micro amounts of sulphur ions, 1849.
- O'Laughlin, J. W., and Jensen, D. F. Separation of rare-earth metals by extraction chromatography with bifunctional phosphine oxides, 2920. — See also Kamin, G. J., 1218.
- Oldham, G., and Darrall, K. G. Determination of bromine in the presence of fluorine and of positron emitters by fast-neutron activation analysis, 3010.
- Olesen, O. V. Determination of phenobarbitone in serum in the presence of other barbiturate, sulphonamides, salicylates and other interfering drugs, 811. Determination of sulthiame in serum and urine by TLC, 2018.
- Ol'gert, I. V. See Vdovtsova, E. A., 1346.
- Olive, G., Lemeignan, M., and Lechat, P. Fluorimetric detection of traces of histamine and histidine, 2135.
- Oliver, D. See Siggaard-Andersen, O., 3330.
- Oliver, I. T. See Yeung, D., 2124.
- Ol'khovich, P. F. See Pilipenko, A. T., 2480.
- Olliff, C. J. See Clements, J. A., 1511.



- Olsen, A. L., and Hills, M. E. Attachment for Cary model 14R spectrophotometer, 1090.
- Olsen, R. W. See Burlingame, A. L., 2312.
- Olsen, S., and Austeng, S. Relation between different methods of determining fat in herring-meal, 2713.
- Olson, C. L. See Oesterling, T. O., 499, 502.
- Olson, D. C. Polarographic behaviour of nickel<sup>II</sup> in the presence of excess of triethylenetetramine, 1281.
- Om, H. See Malik, W. U., 672.
- Omenetto, N., and Rossi, G. Atomic-fluorescence flame spectrometry using a mercury-line source, 2872.
- Omura, H., Tsutsumi, M., and Hatano, S. Spectrophotometric estimation of transoximinase, 342.
- Onaka, R. See Saito, H., 1664.
- Onal, J. D. See Collinson, H. A., 2593.
- Neill, H. J. See Putscher, R. E., 15.
- Nishi, A. See Irako, K., 3113.
- Nishi, K. Determination of sodium with a sodium-glass electrode, 1134.
- Numa, N. See Hamaguchi, H., 1170.
- Nur, E. See Yalçındağ, O. N., 3195.
- nuška, F., and Janák, J. TLC of biphenyl and the terphenyls and *o,m*-quaterphenyl on graphitized carbon black, 2541.
- See also Janák, J., 2511.
- Oghe, W., Thun, H., and Verbeek, F. Stability of some lanthanide complexes with 1,3,4,5-tetrahydroxycyclohexanecarboxylate, 602.
- Oij, W. J. van, and Houtman, J. P. W. Electrophoretic and chromatographic separation and determination of radioactive iridium compounds in normal and carrier-free gas, 3.
- Ort, A. van. See Kamp, W., 2513.
- Oude Beek, J. Determination of thorium, lanthanum and samarium in cerium<sup>IV</sup> nitrate by activation analysis, with the aid of electrophoretic focusing of ions, 2927.
- Opel, H., and Ardel, H. W. Analysis of cyanamide derivatives. VII. Determination of nitroguanidine, 736.
- Orl, W. O., and Bamford, P. C. Preparation of fatty acid methyl esters from lipids for GLC, 1439.
- Orenberg, J. B., and Morris, M. D. Potentiometric titration of fluoride with tetraphenylstibonium sulphate, 1252.
- Oreskes, I. See Hirsch, C., 806.
- Orov, A. G. Successive appearance of spectrographic lines due to molybdenum at different excitation potentials, 1196.
- Orova, G. M. See Ershova, K. N., 3026.
- Orova, V. A. See Malyutina, T. M., 2959.
- Óró, J., and Han, J. Application of combined chromatography-mass spectrometry to the analysis of aromatic hydrocarbons formed by pyrolysis of methane, 750.
- Or, A. A. See Wright, C. M., 1829.
- Ortenblad, B. See Salin, E. F., 2151.
- Oritz, E. See Leibman, K. C., 2039, 3144.
- Ory, R. L. See Conkerton, E. J., 3168.
- Ory, F. H. L. van, and Eleme, E. T. Determination of sorbitol in lemonade for diabetics, 3252.
- Oradca, M., and De Ritter, E. Modification of U.S.P. vitamin D assay for removing interference of vitamin E, 2692.
- Orijima, Y., Nakashima, M., and Furutani, S. Trace elements in food. III. High-frequency polarographic determination of magnesium and calcium, 1536.
- Ościak, J., and Chojnacka, G. Correlation of  $R_M$  values in adsorption and partition chromatography. II.  $R_M$  values of nitroanilines and aminopyridines, 748.
- Osiński, T., and Sosnowski, J. Spectrophotometric determination of urea in microlitre samples of serum and urine after the reaction with biacetyl monoxime and *N*-phenylanthranilic acid, 852.
- Osipova, M. I., and Khodzhaev, G. Kh. Analysis of a mixture of eight benzenecarboxylic acids, 3082.
- Osolinski, T. W., and Knight, N. H. Atomic-absorption spectrophotometric determination of osmium, 173.
- Ospanov, Kh. K., and Songina, O. A. Separate determination, with unithiol as solvent, of cuprite and tenorite in the presence of the metallic phase, 2356.
- See also Songina, O. A., 2360.
- Ostanina, N. M., Kolechkova, A. F., and Zadornova, E. G. Spectrographic determination of aluminium, iron, calcium and magnesium as impurities in silicon carbide, 1191.
- Osteryoung, R. A. See Lauer, G., 1688.
- Ostromow, H., and Hofmann, W. Determination of rubber additives in milk, 1545.
- Ota, M. Removal of iron<sup>III</sup> from isobutyl methyl ketone medium with silica gel, 146.
- Otmakhova, Z. I., Chashchina, O. V., and Kataev, G. A. Use of ion-exchange resins in spectrochemical analysis, 2867.
- Ottenstein, D. M. See Levins, R. J., 717.
- Otter, G. E., and Taylor, L. Determination of the sugar composition of wort and beer by GLC, 973.
- Otto, C. H., jun. See Boyle, W. G., 53.
- Ovcharenko, F. D., D'yachenko, N. S., Vdovenko, N. V., Tarasevich, Yu. I., and Sharkina, E. V. Adsorptive properties of organosubstituted vermiculite. II. Effect of the chain length of the organic moiety on the adsorptive properties, 430.
- Ovcharenko, V. I. See Kotyaeva, K. A., 2967.
- Overfield, C. V., and Winefordner, J. D. Measurement of permanent gases by a flame-emission gas-chromatographic detector, 553.
- See also Williams, H. P., 440, and Winefordner, J. D., 1072.
- Ovodov, Yu. S., and Evtushenko, E. V. Analysis of sugar mixtures by GLC, 1321.
- Ovrutskii, M. I. See Babko, A. K., 28.
- Owades, J. L., and Dono, J. M. Direct colorimetric determination of aldehydes in alcoholic beverages, 2200.
- Owen, J. A. See Kilgariff, M., 2586.
- Ozawa, L., and Toryu, T. Quantitative determination of rare-earth metals in yttrium oxide by spectrofluorimetry, 1800.
- Ozerskaya, F. A. See Fedorov, A. A., 1239.
- Ozvald, I. See Péter, D. F., 261.

Paesold, G., Müller, Klaus, and Keiffer, R. Determination of oxygen, nitrogen and hydrogen in oxides and refractories by vacuum de-gassing at high temperature, 37.

Page, F. M., and Woolley, D. E. Mechanism of the determination of phosphorus with a flame ionisation detector, 2272.

Pahil, S. S. See Paul, R. C., 1694.

Pakalns, P. Spectrophotometric determination of traces of phosphorus by an extraction method, 1833. Spectrophotometric determination of traces of silicon in 'pure' copper and copper alloys, 2885.



- Pakhomova, I. E.** See **Chumachenko, M. N.**, 3051.
- Pal, S. K.** See **Barua, A. K.**, 1433.
- Páládu, L.** Rapid determination of mercury in the atmosphere by reflectance spectrophotometry, 2751.
- Palamarchuk, N. A.** See **Turkel'taub, N. M.**, 1764.
- Palazzeschi, L.** See **Alberti, G.**, 1114.
- Palata, O.** See **Tesarík, K.**, 3056.
- Paletta, B.** See **Wawschinek, O.**, 1998.
- Paliokas, A. M., Lee, W.-H., and Schroepfer, G. J., jun.** Improved separation of sterols by column chromatography, 2631.
- Palik, Š.** See **Šenegačnik, M.**, 1016, 1600.
- Pálmai, G.** See **Vajta, L.**, 759.
- Palmer, N. J.** See **Baron, R. L.**, 2190.
- Palter, R.** See **Kohler, G. O.**, 396.
- Pal'yanova, M. V.** See **Yamaleev, I. Ya.**, 738.
- Pampuch-Karska, K.** Determination of naphthalene in air, 1002.
- Panek, E.** See **Siest, G.**, 2065.
- Panitz, J. A.** See **Müller, E. W.**, 2314.
- Panova, G. V.** See **Terent'ev, A. P.**, 1103.
- Pantaler, R. P., Lebed', N. B., and Semenova, L. N.** Absorptometric determination of trace impurities in semiconductor compounds, *e.g.*, sulphides and selenides of cadmium and zinc, 2376.  
— See also **Lebed', N. B.**, 2378.
- Pantovic, D.** Separation and identification of some organophosphate insecticides by TLC and their determination after conversion into orthophosphate, 3268.
- Papaioannou, S., and Liener, I. E.** Chromatographic procedure for enhancing the purity of commercial preparations of crystalline trypsin, 3188.
- Papariello, G.** See **Salim, E. F.**, 2694.
- Papke, E.** Analysis of some spasmodics. I. Qualitative investigations of benzhexol hydrochloride, methyldiphenethylammonium chloride and (2-[2-*N*-benzylanilino]-ethyl)ethyldimethylammonium bromide, 3226.
- Paralescu, I.** See **Popa, G.**, 2952.
- Parihar, D. B., Sharma, S. P., and Verma, K. K.** Charge-transfer complexes of the high explosives 2-chloro-1,3,5-trinitrobenzene and 1,3,5-trinitrobenzene with amines, 789. Determination of explosive nitrates, 1399.
- Paris, R. A.** See **Gallet, J.-P.**, 556.
- Paris, R. R.** See **Saint-Firmin, A. R.**, 1498.
- Parissis, C. M.** See **Van Loon, J. C.**, 1819, 2991.
- Parker, G. A., and Boltz, D. F.** Ultra-violet spectrophotometric determination of chromium as the peroxochromic acid-2,2'-bipyridyl complex, 2446.
- Parker, P. H., jun.** See **Bly, R. M.**, 1389.
- Parkhurst, R. M.** See **Skinner, W. A.**, 2677.
- Parodi, P. W.** Detection of butter fat adulteration and synthetic butter fats. I. Sterol analysis, 2177.
- Parpiev, N. A.** See **Talipova, L. L.**, 1259.
- Parr, C. W.** See **Carter, N. D.**, 915.
- Parrák, V., and Radějová, E.** Oscillopolarographic identification of some *Rauwolfia* alkaloids, 1501.
- Parrish, F. W.** See **Evans, M. E.**, 3064.
- Parsons, J. G., and Patton, S.** Two-dimensional TLC of polar lipids from milk and mammary tissue, 834.
- Parsons, M. L., and Winefordner, J. D.** Optimisation of critical instrumental parameters for achieving maximum sensitivity and precision in flame spectrometry, 1085.
- Parus, J.** Determination of sulphur in intermediates of sulphur-ore processing by  $\beta$ -ray back-scattering, 2990.
- Parus, J., Kowalski, Z., and Ney, W.** Device for  $\beta$ -ray back-scattering analysis of mixtures of elements with neighbouring atomic numbers, 3353.
- Parveen, S.** See **Khan, Mohammad A.**, 2501.
- Pasarela, N. R.** See **Mooney, R. P.**, 991.
- Pascal, B.** See **Donati, J. R.**, 1730.
- Pashchenko, E. N., and Mal'tsev, V. F.** Photometric determination of tungsten in steel and other alloys with catechol violet, 1877.
- Pashev, I. G.** Effects of some inhibitors and acetylation on the electrophoretic pattern of glutamate dehydrogenase, 2111.
- Pasovskaya, G. B.** Determination of calcium in the presence of magnesium, iron and aluminium by conductimetric titration with sodium nitrilotriacetate, 2897.
- Pašteka, M.** See **Slávik, I.**, 1965.
- Pastukhova, M. M., Lachko, O. A., and Dolgorukova, G. S.** Titrimetric determination of traces of gold in metallic antimony, 1211.
- Pastuska, G., Petrowitz, H.-J., and Krüger, R.** TLC of flavonoids on ready-prepared plates, 3.
- Patai, S.** See **Halpern, Y.**, 720.
- Pataki, G., and Zürcher, H.** Reproducibility of  $R_F$  values in ion-exchange chromatography of poly(ethyleneimine)cellulose layers, 2.  
— See also **Jänchen, D.**, 2.
- Patek, P., and Sorantin, H.** Determination of trace elements in chromatographic paper by neutron activation and  $\gamma$ -ray spectrometry, 432.
- Patel, D. J., Bhatt, R. A., and Bafna, S. L.** Separation of maleic acid and fumaric acid, 1331.
- Patel, P. R.** See **Gandhi, S. B.**, 3237.
- Pater, B. K.** See **Siegfried, B.**, 3239.
- Paterok, N.** See **Kotowski, W.**, 3058.
- Paterson, N.** Relative constancy of 24-hour urine volume and 24-hour creatinine output, 317.
- Patimo, C.** See **Ferro, C.**, 2936.
- Patriarche, G. J.** Coulometric micro-determination of alkaloids, nitrogenous organic bases and quaternary ammonium salts with the use of electrolytically generated silver, 2680.
- Pats, R. G., and Semochkina, T. V.** Vector-polarographic determination of traces of selenium in purified tellurium and in ores, 1235. Determination of tellurium in copper or nickel by a polarography, 1236.
- Patsuk, V. V., Tikunova, N. I., and Kosikhina, G.** Determination of traces of selenium in industrial and natural materials, 1231.  
— and **Subbotina, T. S.** Absorptometric determination of selenium with *N*-phenylanthranilic acid, 1232.
- Patterson, J.** See **Griffith, O. M.**, 1032.
- Patton, S.** See **Parsons, J. G.**, 834.
- Pauk, G. L., and Reddy, W. J.** Measurement of adenosine 3',5'-phosphate, 898.
- Paukner, O.** See **Litomiský, J.**, 612.
- Paukov, V. N., Rudenko, B. A., and Kuchero, V. F.** Analysis of essential oils by means of capillary chromatography, 1956.
- Paul, A.** See **Janardhan, P. D.**, 1822.
- Paul, R. C., Kaushal, R., and Pahl, S. S.** Nitro methane as a polar solvent. III. Study of acid-base neutralisation reactions by suitable potentiometric methods and visual indicators, 1694.
- Paul, T. R.** See **Firsching, F. H.**, 1799.
- Paulis, J. W.** See **Christianson, D. D.**, 2099.
- Paulus, H. J.** See **Petersen, C. M.**, 3375.
- Pauly, J.** See **Bigliocca, C.**, 512.
- Pauschmann, H.** Automated temperature-programmed gas chromatography for permanent gas analyses, 3.

- avlenko, L. I., Laktionova, N. V., and Sklyarenko, Yu. S. Determination of trace impurities in oxides of neodymium, samarium and dysprosium, 1176.  
— See also Rudnev, N. A., 2389.
- avlichenko, V. A. See Yulyupa, F. M., 1878.
- avlova, I. V. See Vinogradov, A. V., 2891.
- avlova, Z. N. See Navyazhskaya, E. A., 2583.
- awelczak, M. Titration of EDTA solutions with lead nitrate in the presence of 4-(2-pyridylazo)-resorcinol as indicator, 1334. Complexometric determination of aluminium in aluminium phosphate with 4-(2-pyridylazo)resorcinol as indicator, 1533. Volumetric determination of soluble orthophosphates in pharmaceutical preparations containing aluminium phosphate, 3241.
- awelczyk, K. See Adamski, R., 3216.
- azdzerski, A. See Fauvet, J.-E., 1313.
- abody, C. O., and Preston, H. E. Plastic sachet dosimeter containing lithium fluoride powder for surface and finger-tip dosimetry, 511.
- aker, F. W., and Tweedale, C. E. Gel-permeation chromatography: gel preparation and packing technique, 429.
- arson, E. F. See Heslop, R. B., 628.
- art, R. F., Jona, F., Wenst, H. R., and Seirmarco, J. A. Quantitative determination of evaporated silicon films by neutron activation, 1818.
- ase, E. C., and Thorburn, S. Specific retention volumes for  $C_6$  to  $C_{12}$  alkanes with stationary phases in the homologous series of octacosane, squalane, dotriacontane and hexatriacontane, 710.
- ase, H. L. Determination of 3-*t*-butyl-5-chloro-6-methyluracil residues by micro-coulometric gas chromatography, 2741.
- ack, E. S. Quantitative spectrographic determination of hafnium in tungsten by a vacuum-cup solution method, 2451.
- ack, P. F. See Pierce, T. B., 1272.
- esok, R. L., and Windsor, M. L. Response of a thermal-conductivity micro-detector in gases of low thermal conductivity, 2271.  
— See also Saunders, D., 1743.
- ers, F. G. Assay of aflatoxin: review, 1435.
- eters, J. See Crommelynck, F., 3179.
- usova, L. D. See Shkrobatova, T. I., 1612.
- hl, G. Identification of volatile aliphatic amines as micro-crystalline hydrochlorides, 2521.
- illon, E. See Santi, N., 3171.
- isach, M. See McMurray, W. R., 2368.
- iković-Tadić, I., and Vitorović, S. L. Determination of organophosphorus insecticides in plant material by TLC and the ring-oven technique, 3269.
- ila, A. See Carloni, G. P., 217.
- iczar, T. See Janik, B., 1780.
- ila, E. Use of helium as carrier gas in the micro-determination of oxygen in organic substances, 1903.
- ila, P. A., Landgrebe, A. R., DeVoe, J. R., and Purdy, W. C. Differential controlled-potential coulometry with use of sub-stoichiometric radioisotope dilution, 1702.  
— See also Landgrebe, A. R., 584.
- lerin, F., Demay, D., and Mancheron, D. Determination of potassium or organic bases with sodium tetraphenylborate by semi-micro two-phase titration, 1137.
- inketh, G. E. See Bradley, M. P. T., 705, and Braithwaite, B., 216.
- innington, S. N. TLC and GLC of *N*-acetyl-5-methoxytryptamine, 2648.
- pe, B. L. See Lassandro Pepe, B.
- Perego, R., and Castoldi, B. Determination of pemoline, 3220.
- Pérez, F. P. See Pino Pérez, F.
- Perez, G. See Cacace, F., 1638.
- Pérez, M. Z. See Zunzunegui Pérez, M.
- Pérez-Bustamante, J. A., and Burriel-Martí, F. Determination of arsenic and of nitrogen in bis-diazoarsono-derivatives of chromotropic acid: analysis of the structural isomers arsenazo III and palladiazoo, 1943.
- Perichon, J., and Buvet, R. Electrochemistry in tetrahydrofuran medium. I. Fixation and experimental determination of acidity in tetrahydrofuran, 1093.
- Perkins, A. C. See Christianson, A. H., 1623.
- Perkins, R., and Moreton-Smith, M. J. Chromatographic determination of hydrogen isotopes in zirconium alloys by carrier-gas extraction, 1200.
- Perl (née Molnár), I., and Maros, L. Analysis of 1,2-diols and polyhydric compounds. VII. Determination of melibiose through the tri-aldehyde formed by oxidation with periodate 1319, 3062; VIII. Determination of maltose, lactose and cellobiose through the aldehydes formed by oxidation with periodate, 1319, 3062; IX. Determination of  $\beta$ -D-methylarabinopyranoside,  $\beta$ -D-benzylarabinopyranoside and  $\alpha$ -D-methylglucopyranoside through the aldehyde formed by oxidation with periodate, 1319; X. Determination of trehalose, sucrose and raffinose through the aldehyde formed by oxidation with periodate, 1319.
- Permayakova, T. A. See Degtyareva, O. F., 2393.
- Perotti, L. See Gaidano, G., 2637.
- Perricone, S. C. See Dejongh, D. C., 3186.
- Perron, R., and Mathieu, A. Apparatus for differential thermal analysis suitable for the examination of solidified fatty substances, 3364.
- Perry, B. W., and Hill, R. J. Determination of haemoglobins A and S separated by starch-gel electrophoresis, 2095.
- Perti, O. N., and Prakash, I. Polarimetric estimation of zirconium, 2965.
- Pešić, D. S. See Matić, J. S., 2352.
- Pesis, A. S. See Gusev, S. I., 106.
- Peták, P. See Vorlíček, J., 1213.
- Petel, P. See Clayner, A., 3.
- Péter, D. F., and Ozvold, I. Oscilllopolarography and its applications in the textile industry: determination of naphthol derivatives, 261.
- Péter, F., and Hegedűs, V. Continuous polarographic determination of active chlorine, 2456.
- Petersen, C. M., and Paulus, H. J. Continuous monitoring of aerosols over the 0.001 to 10- $\mu$ m spectrum, 3375.
- Petersen, J. C. See Davis, T. C., 1367.
- Peterson, D. L. See Blytas, G. C., 257.
- Peterson, M. J. See Gabler, R. C., jun., 2375.
- Peterson, R. C. Disc electrophoresis using large acrylamide gels, 1078.
- Peterson, R. E., and Ciegler, A. Standard aqueous solutions of aflatoxin, 309. Separation of aflatoxins by two-dimensional TLC, 1436.
- Petitclerc, J. C. See Seely, J. H., 287.
- Petrakev, A. See Burgudzhiev, Z. T., 2293.
- Petrashen', V. I. See Lozanovskaya, I. N., 2433.
- Petrov, A. A. See Borisov, V. P., 1269.
- Petrov, B. I. See Zhivopistsev, V. P., 2385.
- Petrow, H. G. See Cosolito, F. J., 1869.
- Petrowitz, H.-J. Use of TLC within the framework of DIN regulations, 2.  
— See also Pastuska, G., 3.
- Petrů, F. See Jursík, F., 1455.



- Petschik, H., and Steger, E. TLC determination of distribution of phosphorus of alkyl phosphorothioates, 1339.
- Petsev, N., and Dimitrov, Kh. Evaporation of stationary phase from GLC columns, 1068.
- Pettitt, B. C. See Simmonds, P. G., 445.
- Pfah, W., and Bernhart, K. Passage of lubricants from polystyrene into coconut oil, 3260.
- Pfeffer, M., Schor, J. M., Gluck, N., Semmel, M. G., and Griboff, S. Determination of human urinary excretion of orally administered anisotropine methobromide, 2020.
- Pfeifer, S. See Hentrich, K., 917, 928.
- Pfeiffer, W. See Günther, H., 3249.
- Pfeilsticker, K. Low-voltage high-frequency sparks as light source in emission spectrography, 464.
- Pfiegel, P., and Wagner, G. Polarography of heterocyclic compounds. V. Polarographic behaviour of methaqualone and 3-(2-ethylphenyl)-2-methylquinazolin-4-one, 927.
- Pharmaceutical Society of Great Britain. Analytical implications of the effect of formulation on the efficiency of drug preparations, 1486.
- Phatak, G. M., and Bhat, T. R. Complexometric estimation of chromium, iron and aluminium in chromium-iron and chromium-aluminium mixtures, 2338.
- Philibert, J., and Tixier, R. Problems of quantitative electron-probe micro-analysis, 1097.
- Phillips, F. See Viswamanathan, C. V., 715.
- Phillips, G. See Weldrick, G. J., 610.
- Phillipson, J. D., and Shellard, E. J. Thin-layer chromatographic behaviour of some ring-E *seco* oxindole alkaloids, and their relationship with indolizidine and some simple oxindoles, 3204.
- See also Shellard, E. J., 3205.
- Philp, R. H. See Kinard, W. F., 496.
- Phillipotts, J. A. See Schnetzler, C. C., 1175.
- Phipps, A. M., and Hume, D. N. Ion-exchange processes in liquid ammonia, 1647.
- Picer, M., and Strohal, P. Determination of thorium and uranium in biological materials, 1999.
- Piechocki, J. T. Gas-chromatographic determination of ethanol in pharmaceuticals: comparison of polyoxyethylene glycol 400 and divinylbenzene polymer columns, 2162.
- Pierce, T. B., Edwards, J. W., and Mapper, D. Application of a sealed-tube neutron generator to the determination of copper and silicon in aluminium alloys, 76.
- Peck, P. F., and Cuff, D. R. A. Application of inelastic scattering of protons to determination of silicon in steel, 1272.
- Piesch, E. See Maushart, R., 509.
- Pietrogrande, A., and Dalla Fini, G. Micro-determination of chlorine or bromine and sulphur by the Schöniger technique with smaller samples, 1304. Reduction of analysis time for micro-determination of carbon and hydrogen, 1898.
- Pietropaolo, C. See Salvatore, F., 349.
- Pietrzyk, D. J. Acidic behaviour of sulphonic acids and perchloric acid in acetic anhydride solvent mixtures and their use as titrants, 11.
- Pikhtovnikova, A. K. See Songina, O. A., 1806.
- Pilipenko, A. T., and Maslei, N. N. Colorimetric determination of nickel in steel as the dithio-oxalate complex, 3025.
- and Ol'khovich, P. F. Extraction - photometric determination of palladium, 2480.
- Shpak, E. A., and Kurbatova, G. T. Determination of vanadium in steel and ores with N-phenylfurohydroxamic acid, 1874.
- Pilkington, E. S., and Smith, P. R. Spectrophotometric determination of chromium in ilmenite, 650.
- Pillay, D. T. N., and Mehdi, R. Separation of simple indole derivatives by TLC, 3161.
- Pinatti, D. G. See Antcliffe, G. A., 3365.
- Pinfold, T. A. See Mahne, E. J., 3033.
- Pinkasová, M. See Blažek, J., 1519.
- Pinkerton, A. See Theisen, A. A., 2599.
- Pino Pérez, F. See Bendito, D. F., 1879.
- Pinsky, A. See Trop, M., 2519.
- Pinte, G. Application of neutron-activation analysis to the determination of impurities in molybdenum, tungsten and nuclear-grade graphite, 129.
- Pintér, M. See Szakács (née Pintér), M.
- Pinter, T. See Jandrić, Z., 365.
- Piør, W., and Tóth, L. Detection and determination of biphenyl, 2-phenylphenol and diphenylamine by TLC, GLC and spectrofluorimetry, 2188.
- Piringer, O. See Mohnke, M., 2349.
- Pirkle, H. Direct location of phenylthiohydantoin derivatives of amino-acids on paper chromatograms with u.v. radiation, 1453.
- Pirlea, M. See Drăgulescu, C., 2986.
- Pirro, P. Use of Chromel - Alumel thermocouples for the measurement of small temperature differences, 1722.
- Pištek, P., and Pokorný, Jiří. Determination of oxygen inclusions in steel for anti-friction bearings, 1275.
- Pitha, J., and Jones, R. N. Evaluation of mathematical functions to fit i.r. band envelopes, 482.
- Píti, T. See Vestergaard, P., 1629.
- Pitney, R. E. See Cain, D. F., 2083.
- Pitra, J. Role of isotherms of water vapour in chromatography, 2.
- Pittoni, A., and Rubaltelli, F. F. Procedure for extracting DNA from tissues, 2097.
- and Sussi, P. L. Saturation chamber for TLC, 2784.
- Pittwell, L. R. Use of line width for the determination of spectrographic intensity ratios, 2294.
- Pivoňková, M. See Kyrš, M., 740.
- Plaksin, I. N., Mikgailov, G. I., and Starchik, L. F. Gamma emission analysis, 2813.
- Plamondon, J. Determination of uranium in geochemical samples by paper chromatography, 1812.
- Planche, N. E. See Crotte, C., 1040.
- Planque, M. P. de. See Langerijt, J. J. A. M. van de, 2690.
- Plant, H. See Agahigian, G., 486.
- Plashchinskaya, R. V., Labuda, A. A., and Nekrashevich, I. G. Mutual effect of silicon, copper and zinc in the plasma of a pulsed-spark discharge at low pressure, 45.
- Plews, R. W. Polarographic determination of lead and copper in sugar-refinery products, 370.
- Pligin, S. G. Photometric determination of antibiotics of the tetracycline group, 2137.
- Plock, C. E., and Caldwell, C. E. Colorimetric determination of iron in plutonium metal by use of a nitrobenzene extraction technique, 86.
- and Polkinghorne, W. S. Controlled-potential coulometric determination of uranium and neptunium in uranium - neptunium alloys, 608.
- Pobiner, H. Specific u.v. spectrophotometric determination of europium oxide as a complex mixture of rare-earth oxides, 2930.
- Podchainova, V. N., and Malkina, T. G. Determination of small amounts of copper in lead-nickel-based materials by difference photometry, 1144.



- odchainova, V. N., and Skornyakova, L. V. Fluorimetric determination of traces of boron in soil with benzoin, 2204.  
 — See also Chechneva, A. N., 3040, Malkina, T. G., 1161, and Vozisova, V. F., 2412.  
 odgornova, V. S., Abdullaeva, Kh. S., and Talipov, Sh. T. Absorptiometric determination of indium, 1169. Photometric determination of gallium, 2915.  
 odol'skaya, L. A. See Shul'man, V. M., 2526.  
 odrabinek, P. A. Determination of fibrinogen in blood by weighing the wet fibrin, 330.  
 oerlen, P. V. S. See Turkstra, J., 42.  
 oethke, H., and Köhne, H. Analytical use of halo-2,4-dinitrobenzenes. II. Determination of thymol and carvacrol, 768.  
 ogosyan, E. T. See Kropivnitskaya, R. A., 3110.  
 okorný, Jan, and Hladík, J. Comparison of column, thin-layer and paper chromatography of oxidised alkyl oleates, 2.  
 — See also Hladík, J., 769.  
 okorný, Jiří. See Pištěk, P., 1275.  
 olitzer, W. M. See Georges, R. J., 2060.  
 olivanova, N. G., Fratkin, Z. G., Bogdanova, N. N., and Nedol'sina, N. P. Spectrographic determination of iron, manganese, copper, lead and arsenic in phosphoric acid, 2970.  
 olkinghorne, W. S. See Plock, C. E., 608.  
 ollard, G. E. Characteristic i.r. absorption bands for Diels-Alder *p*-benzoquinone adducts and derivatives, 2535.  
 ollock, E. N. Spectrophotometric determination of tellurium with 5-mercapto-3-phenyl-1,3,4-thiadiazole-2-thione after separation with diantipyrylmethane and 1,1,2,2-tetrachloroethane, 2997.  
 ollock, J. B. Gravimetric determination of mixed niobium and tantalum pentoxides in niobium-tantalum minerals, 2438.  
 olman, R. J. See Reyden, A. J. van der, 562.  
 olwianiuk, E. See Nerlo, H., 3261.  
 olster, A. See Diemair, W., 391.  
 oluétkov, N. S., Kirillov, A. I., Tishchenko, M. A., and Zelyukova, Yu. V. Fluorimetric analysis for traces of cerium<sup>III</sup> in preparations of other rare-earth metals, 82.  
 — See also Kirillov, A. I., 2402, 2926.  
 oluétkova, E. N., and Nazarenko, V. A. Benzo-hydroxamic acid as an extraction reagent for tungsten<sup>VI</sup>, 130.  
 — See also Nazarenko, V. A., 614.  
 olukarov, A. N. See Makhmetov, M. Zh., 1237, 2995.  
 olyak, É. A., and Gorodentseva, T. B. Comparison of the accuracy of two titrimetric methods for determining vanadium, 1214.  
 olyakova, A. A., Lukashenko, I. M., Khmel'nitskii, R. A., Brodskii, E. S., and Zimina, K. I. Mass-spectrometric analysis of synthetic alkylbenzenes, 1953.  
 olydoropoulos, C. N., and Voliotis, S. D. Spectrophotometric determination of hyponitrite, 1832.  
 oma, J. See Fruchard, C., 984.  
 omażańska, T. See Gawrych, Z., 3233.  
 onder, C. Determination of phenylephrine hydrochloride in combination with other drugs, 3223.  
 onder, L. H. GLC determination of diethylene glycol in poly(ethylene terephthalate), 1972.  
 onomarev, Yu. P. See Bezuglii, V. D., 272.  
 onosov, V. I. See Stepin, V. V., 2994.  
 oole, D. M. Progress in correction for the atomic-number effect, 1097.  
 oole, G. See Hariharan, P. V., 2808.  
 Popa, G., and Paralescu, I. Spectrophotometric determination of germanium<sup>IV</sup> with bromo-pyrogallol red, 2952.  
 Popa, L., Cruceanu, A., and Portocală, R. Determination of the nucleotide composition of ribonucleic acids, 2660.  
 Pope, H. M. See Sinclair, M. J., 1991.  
 Popel', A. A., and Saprykova, Z. A. Determination of paramagnetic species in a flowing liquid by nuclear magnetic relaxation, 1128.  
 Popescu, R., and Ioniță, R. GLC separation of some hydrocarbons and oxygen-containing substances by means of 2'-palmitonaphthone and 2-hexadecylnaphthalene, 443.  
 — See also Beșchea, C., 3057.  
 Poplevina, L. V. See Gusev, S. I., 106.  
 Popov, A., and Stefanov, K. Properties of Wofatit anion-exchange resin: its use for the separation of higher fatty acids, 982.  
 Popov, A. I. See Caruso, J. A., 1938.  
 Popova, T. P., Revyagina, K. I., and Mamedov, M. A. Gas-chromatographic analysis of technical mixtures containing vinyl chloride, 3111.  
 Popper, E., Florean, E., and Marcu, P. Micro-determination of bismuth in the presence of lead and of cadmium. II, 108.  
 Porter, J. W. See Dugan, R. E., 2630.  
 Porter, M. L., and Burke, J. A. Extraction of parathion and diazinon by an acetonitrile procedure, 2193.  
 — See also Burke, J. A., 1584.  
 Porteus, G. T. See McKellar, J. F., 772.  
 Portocală, R. See Popa, L., 2660.  
 Poschenrieder, W. P., and Warneck, P. Mass-spectrometric gas analysis by selective photo-ionisation, 2834.  
 Poser, H. See Beyrich, T., 2128.  
 Post, A. P., and Stanley, C. W. Screening test for carbaryl, 958.  
 Post, M. A. Determination of emulsion-polymerised binders in latex paints by i.r. spectrophotometry, 782.  
 Pošta, A. See Tesařík, K., 3056.  
 Posternak, T. See Szente, A., 1408.  
 Potapov, V. M., Terent'ev, A. P., and Shishkovskaya, N. G. Spectropolarimetric analysis. VI. Micro-determination of aromatic amines with tartaric anhydride dibenzoate, 247.  
 Potgieter, D. J. J. See Schabert, J. C., 850.  
 Potterton, S. S., and Shults, W. D. Evaluation of the performance of the nitrate-selective electrode, 625.  
 Potts, H. R. See So, S. S., 2289.  
 Poulsen, K. Measurement of renin in human plasma, 3189.  
 Poulter, H. Applications of microwave spectroscopy, 3335.  
 Pour, J. See Franc, J., 1899.  
 Powell, J. E., Burkholder, H. R., and James, D. B. Elution requirements for the resolution of ternary mixtures of rare-earth metals, 2923.  
 Powell, R. L. See Houle, M. J., 1323.  
 Powell, S. S. See White, H. B., jun., 3116.  
 Powers, D. See McIsaac, W. M., 1355.  
 Powers, J. See Chanin, G., 1021.  
 Poxon, D. W., and Ellis, M. J. Outline - unit area chromatographic characterisation for bitumens, 1946.  
 Pozdnyakova, A. A. See Vasil'eva, L. N., 1241.  
 Prager, M. J. See Zolty, S., 410.  
 Prakash, I. See Perti, O. N., 2965.  
 Prasad, S., and Trivedi, S. R. C. Electrometric study on the quantitative precipitation of copper<sup>II</sup> as tellurate, 2355.

- Prasad, T. P., and Sastri, M. N. Precipitation of beryllium in presence of succinate by the urea hydrolysis technique, 1785.
- Prat, Y., and Stoll, S. Specific tests for the authenticity of vanilla extracts: detection of resins and pigments by TLC, 3248.
- Pratchett, A. G. See Baker, C. A., 1186.
- Pravisan, D. See Camera, E., 411.
- Pražák, M., and Veselý, K. Amperometric determination of adsorbable organic substances in plating-bath solutions, 166.
- Preetz, W. Ion separation by the counter-current ionophoresis procedure, 2280.
- Preining, O. Cross-sensitivity of the Royco Aerosol Photometer PC 200, 1727.
- Preiss, B. A. See Horvath, C. G., 335.
- Preobrazhenskaya, G. B. See Markova, E. V., 4.
- Prescher, D. See Püschel, F., 1955.
- Prescher, K.-E. See Nietruch, F., 2424.
- Preston, D. See Brown, R., 2849.
- Preston, H. E. See Peabody, C. O., 511.
- Pretorius, E. See McMurray, W. R., 2368.
- Pretorius, V., and Hahn, H. H. Polarographic detection system for chromatography, 1044.
- Preuss, L. E. See Toothacker, W. S., 460.
- Příbil, R., and Horáček, J. Determination of mixtures of zirconium and yttrium ions using EDTA, 97.
- and Veselý, V. Analysis and determination of complexans. II. Determination of EDTA, diethylenetriamine-*NNN''N''N''*-penta-acetic acid and triethylenetetramine-*NNN''N''N''N''*-hexa-acetic acid in their mixtures, 233.
- Příbil, M., and Nedbálková, J. Spectrophotometric determination of dimethylamine in dimethylformamide, 732.
- Primavesi, G. R., McTaggart, N. G., Scott, C. G., Snelson, F., and Wirth, M. M. Specification for gas-chromatographic methods, 1056.
- Přistoupil, T. I., and Kramlová, M. Micro-chromatographic separation of ribonucleic acids from proteins on nitrocellulose membranes, 3184.
- Prokhorova, S. A., Shelpakova, I. R., and Yudelevich, I. G. Spectrographic analysis of high-purity metal antimony with zone melting for concentration of impurities, 2976.
- Prokof'ev, A. I. See Veretil'nyi, A. Ya., 2830.
- Prokopenko, N. A. See Dement'eva, M. I., 2579.
- Prokopets, V. F. See Bil'tyukova, É. P., 1293.
- Pronin, V. A. See Artyukhin, P. I., 1268, 2331.
- Pronk, H. F., and Geest, A. C. von der. Determination of carbon monoxide and carbon dioxide in gas mixtures intended for the calibration of blast-furnace gas analysing instruments, 1617.
- Propst, R. C. Coulometric titration of polonium at the microgram level, 1853.
- See also Kinard, W. F., 496.
- Proskuryakova, G. F. Kinetic determination of traces of iodine, 136.
- Prosser, A. R., Sheppard, A. J., and Libby, D. A. GLC of vitamin B<sub>6</sub> and its application to pharmaceuticals containing pyridoxine, 1510.
- See also LaCroix, D. E., 2202, and Sheppard, A. J., 1931.
- Protopopova, N. P. See Malakhov, V. V., 2955.
- Protzer, H. Z. See Bensch, H., 1160.
- Prouty, R. M. See Menzie, C. M., 2217.
- Prouza, Z., and Rakovič, M. Use of resonance neutrons in activation analysis for gold, 3125.
- Provasoli, A. See Bigliocco, C., 512.
- Pruden, G. See King, H. G. C., 574.
- Prusík, Z. Apparatus and procedure for de-staining polyacrylamide gels, 2283.
- Prunyn, F. J. See Lange, W. E., 2017.
- Prydz, S., and Skammelsrud, K. S. Tritium detection by beta-ray-induced luminescence in standard media for TLC, 2875.
- Przybyłowicz, E. P. See Warburton, C. D., 277.
- Pszonka, B. Application of paper chromatography in the determination of formic and acetic acids in by-products of the cellulose industry, 3101.
- Pujante, A. See Sancho, J., 1808, 2418.
- Pulido, C., Almeida, M. C. M. de, and Almeida, A. A. G. de. Determination of calcium in natural water by flame photometry and atomic-absorption spectrophotometry, 3275.
- Pulido, E. See Lippi, U., 1463.
- Pullan, B. R. See Kumar, S., 1041.
- Pungor, E. Theory and application of anion-selective membrane-electrodes, 491.
- and Halász, A. Micro-determination of germanium in solutions containing hydrogen peroxide and hydrogen fluoride, 91, 1195.
- Szepevary, É., and Havas, J. Voltammetric studies of graphite-impregnated silicone-rubber electrodes, 2317.
- See also Henrion, G., 558, 1768.
- Pupin, F., and Vuillaume, R. GLC of mixtures of lard and goose fat, 3244.
- Purdy, W. C. See Landgrebe, A. R., 584, Pella, P. A., 1702, and Simon, R. K., 3131.
- Purkayastha, B. C., and Dutta, K. N. Radiometric determination of scandium, 595.
- Purnell, J. H., and Shurlock, B. C. Multi-column gas-chromatographic system, 438.
- See also Conder, J. R., 2265.
- Püschel, F., and Prescher, D. Higher-molecular weight aliphatic sulphonic acids. VII. Paper chromatography of sulphonates and several alkyl sulphates, 1955.
- Püschel, R. Limiting concentration and detection limit in quantitative analytical methods: calculation of these values for spectrophotometric methods, 2303.
- Putscher, R. E., O'Neill, H. J., Dynako, A., and Krupnick, A. C. Rapid-response gas chromatograph for hydrocarbon analysis of compressed gas supplies, 15.
- Puyo, M. See Hetman, J. S., 2436, 2760.
- Pyatnitskii, I. V., and Kharchenko, R. S. Extraction of tributylamine-tartrate and tributylamine-citrate complexes of iron and cobalt, 3017.
- and Klibus, A. Kh. Use of alkaline solutions of mannitol as polarographic basal electrolytes, 491.
- Pyatolin, L. P. See Zhivopistsev, V. P., 1178.

- Qashu, H. K. Micro-digestion procedure for the determination of amino-nitrogen in plant material, 2594.
- Quaas, D. See Alter, J., 1587, and Efer, J., 2458.
- Quackenbush, F. W., and Rund, R. C. Study of the problem of sampling, 5.
- Quentin, K. E. Colorimetric determination of fluoride, 1008.
- Quercia, V. See Calò, A., 1096, and Cardini, C., 1096.
- Quick, Q., Layton, R. F., Harless, H. E., and Haynes, O. R. Determination of low concentrations of 2-naphthylamine in 1-naphthylamine, 1944.



- Quinche, J. P., and Quinche-Sax, S.** Displacement ion-exchange chromatography of the cations of magnesium, manganese<sup>II</sup>, iron<sup>II</sup>, cobalt<sup>II</sup>, zinc, nickel<sup>II</sup>, beryllium, aluminium, copper<sup>II</sup>, gallium, uranium<sup>VI</sup>, vanadium<sup>IV</sup> and iron<sup>III</sup> and a study of their possible simultaneous determination, 1751.
- Quinche-Sax, S.** See **Quinche, J. P.**, 1751.
- Quinn, J. A.** See **Blair, L. M.**, 2238.
- Quittner, P.** Maximum-likelihood evaluation of maximum sensitivity for activation analysis in the presence of interfering activities, 517.
- Rureshi, M., Akhtar, I., and Mathur, K. N.** Separation of metal ions on stannic phosphate and stannic tungstate papers: specific separations of gold<sup>III</sup>, mercury<sup>II</sup>, platinum<sup>IV</sup>, magnesium, molybdenum<sup>VI</sup> and selenium<sup>IV</sup>, 1112.
- and **Khan, Mukhtar A.** Precipitation chromatography on strontium chromate paper, 19.
- and **Rawat, J. P.** Detection tests by use of the tin<sup>IV</sup> molybdate exchanger: detection of iron<sup>II</sup>, 138.
- Rureshi, T.** See **Hashmi, M. H.**, 924.
- R**
- Rabek, V.** Comparison of different types of chromatography sheets, 2.
- Raber, H.** Analysis of purine derivatives. VII. Conductimetric determination of purines, 3181.
- Rabiah, S.** See **Fischl, J.**, 912.
- Rabitzsch, G., and Tambor, U.** Determination of cardenolides and cardenolide glycosides with 2,2',4,4'-tetranitrophenyl, 921.
- Rabusay, D.** See **Illaszewicz, A.**, 2332.
- Rachinskii, V. V.** Basic principles of radial chromatography, 2.
- Racz, W. J.** See **Chatten, L. G.**, 2152.
- Radějová, E.** See **Parrák, V.**, 1501.
- Radin, N. S.** Spot applicator for thin-layer plates, 1051.
- Rad'ko, V. A.** Complexometric determination of aluminium, manganese, iron and copper in bronze, 2358.
- Radzhabova, M. M.** See **Strel'tsova, S. A.**, 3007.
- Raevskaya, L. N.** See **Mizetskaya, I. B.**, 2377.
- Rafalowska, H.** See **Danielak, R.**, 3217.
- Rafkova, R. Sh.** See **Zamanov, R. Kh.**, 1601.
- Rafols Rovira, J. M.** See **Obiols, J.**, 2354.
- Ragab, M. T. H.** Fluorescence detection of organothiophosphorus pesticides and their sulphur-containing break-down products after TLC, 405.
- Apparatus for micro TLC, 3297.
- Raible, K., and Mohr, U. H.** Detection of quaternary ammonium compounds in beer, 975.
- Rajani, H. J.** Determination of lime reserve in soil, 3262.
- Rajput, A.** See **Fitak, B.**, 368.
- Rakhmatulina, L. G.** See **Stepin, V. V.**, 1258.
- Raković, M.** See **Prouza, Z.**, 3125.
- Rakovskii, E. E., and Serebryanij, B. L.** Neutron-activation determination of gold in rocks by using sub-stoichiometric separation, 2889.
- Ramacharyulu, M.** See **Rao, M. J.**, 1369.
- Ramakrishna, T. V., West, P. W., and Robinson, W.** Determination of calcium and magnesium by atomic-absorption spectrophotometry in acetylene flames, 2896.
- Ramaley, L., and Holcombe, W. A.** Column-chromatographic separation of halides, 1245.
- Ramanarao, M. V., Telkikar, V. S., and Husain, A.** Extraction of dilute aqueous phenolic solutions with butyl acetate and isoamyl acetate, 743.
- Ramanathan, S., Rivlin, J., Stamm, O. A., and Zollinger, H.** Determination of formaldehyde in cellulose formals and methylated cellulose formals, 3102.
- Ramappa, P. G.** See **Gowda, H. S.**, 2853.
- Ramaut, J. L.** TLC separation of lichen acids with detection with Fast Blue Salts B and BB, 828.
- TLC separation of atranorin from usnic acid, 1432.
- Ramelli, G.** See **Camoni, I.**, 2746.
- Ramirez, E. M.** See **Everson, W. L.**, 1248.
- Ramírez-Muñoz, J.** Determination of arsenic and selenium by atomic-absorption flame photometry, 2972.
- and **Roth, M. E.** Metallurgical applications of atomic-absorption flame photometry. I. Interference by iron on cobalt, chromium, copper, manganese and nickel, 3020.
- Rammelt, R., and Bergmann, H.** Detection and determination of soluble nucleotides and their derivatives in cereal seedlings by paper chromatography, 1474.
- Ramos, E., and Bou de Rivera, C.** Volumetric determination of 2-furaldehyde in distillates obtained from bagasse, 2172.
- Ramotowski, S., and Szczesniak, M.** Determination of potassium salts in pharmaceutical preparations with use of sodium tetraphenylborate, 1531.
- Ramsay, I. A.** See **Munro, I. H.**, 2822.
- Ramshaw, E. H.** See **Forss, D. A.**, 944.
- Randerath, E., and Randerath, K.** Ion-exchange TLC. XVI. Preparation and base analysis of oligonucleotides, 1476.
- See also **Randerath, K.**, 1476.
- Randerath, K.** Ion-exchange TLC. XVIII. Detection of nanogram amounts of purine derivatives by phosphorescence at  $-196^{\circ}$ , 1476.
- and **Randerath, E.** Ion-exchange TLC. XVII. Separation of oligonucleotides from a pancreatic ribonuclease digest of RNA on polyethylenimine-cellulose, 1476.
- See also **Randerath, E.**, 1476.
- Rangnekar, A. V., and Khopkar, S. M.** Liquid-liquid extraction and spectrophotometric determination of iridium with 2-thenoyltrifluoroacetone, 174.
- Anion-exchange separation of lead as its chloride or malonate complex, 618.
- Rankin, C. T., jun.** See **Anderson, N. G.**, 1034.
- Rannev, G. G.** See **Salin, A. A.**, 1697.
- Ranzetta, G. V. T., and Scott, V. D.** Effect of atomic number in electron-probe micro-analysis of copper-nickel alloys, 47.
- Point-anode proportional counter for the detection of soft X-rays in micro-analysis, 1655.
- Rao, G. G.** See **Muralikrishna, U.**, 1858.
- Rao, K. V.** See **Rao, V. P. R.**, 1855.
- Rao, M. J., Ramacharyulu, M., and Vaidyeswaran, R.** Analysis of gas from cracking of low-temperature tar by a combination of Haage's and chromatographic methods, 1369.
- Rao, S. P.** See **Mathur, D. L.**, 245.
- Rao, T. S.** See **Arnikar, H. J.**, 1071.
- Rao, V. P. R., Rao, K. V., and Sarma, P. V. R. B.** Spot test for molybdenum based on extraction of its 1,10-phenanthroline-thiocyanate complex, 1855.
- See also **Sarma, B. V. S.**, 126.
- Rapoš, P.** See **Dulák, K.**, 1532.
- Rascio, V.** See **Gramain, P.**, 1391.
- Rasmussen, K. L.** See **Rockerbie, R. A.**, 914.
- Rasse, H.** See **Witte, K.**, 2537.
- Rasson, E.** See **Dugan, E. E.**, 2630.
- Rastyannikov, E. G.** See **Berezkin, V. G.**, 3304.



- Ratner, R., Itzhaki, J., and Kohn, D. H. Selective cation-exchange resin. I. Selectivity towards alkali metals, 2877.
- Rauch, P., and Tykva, R. Determination of tritium in organic compounds with a hydrogen-filled gas counter, 1299.
- Raver, R. E. See McKinney, R. W., 2801.
- Rawat, J. P. See Qureshi, M., 138.
- Ray, B. E., and Wilcox, M. Separation of alkyl and of trimethylsilyl derivatives of dicamba, 3,6-dichloro-5-hydroxy-*o*-anisic acid and 3,6-dichlorogentisic acid by TLC and GLC, 818.
- Rayanov, F. Z. See Starshov, I. M., 1332.
- Raymond, S. See Jordan, E. M., 459.
- Razik, F. A. A. See Abdel Razik, F. A.
- Reade, M. J. A. See Jenkins, A. E., 551.
- Reager, J. C. See Hoover, W. L., 2207.
- Rebelein, H. Colorimetric determination of citric acid in wine and grape must, 1567. Effect of acetaldehyde combined with sulphur dioxide on the colorimetric determination of lactic acid in wine, 2731.
- Rebertus, R. L., Fiedler, K. R., and Kottong, G. W. Separation of gaseous organic compounds containing nitrogen and fluorine by liquid column chromatography, 1333.
- Rechnitz, G. A., and Kugler, G. C. Transient phenomena at glass electrodes, 1683.
- Lin, Z. F., and Zamochnik, S. B. Potentiometric measurements with sulphate- and phosphate-sensitive membrane electrodes, 118.
- and Shatkay, A. Selectivity of calcium-ion-responsive membrane electrodes, 2370.
- Record, R. G. H. See George Kent Ltd., 3343.
- Reddy, W. J. See Pauk, G. L., 898, and Street, J. M., 1484.
- Redlich, D. von. See Diamant, B., 328.
- Reed, J. J. R. Structure determination of substituted benzenes by proton magnetic resonance: empirical treatment of substituent effects and their utility in predicting chemical shifts, 238.
- Reed, R. A. See Bennett, H., 651.
- Reed, S. J. B. Probe-current stabilities in electron-probe micro-analysis, 2816.
- See also Duncumb, P., 1097.
- Reed, W. C. See Microwave Instruments Ltd., 1669.
- Reek, S. van den. See Hoog, P. de, 2715.
- Rees, P. O. Determination of the refractive index of glass fragments by means of a temperature-control method, 1891.
- Rees, T. B. See Jenkins, W., 83.
- Regan, A. F., and Andrews, B. R. Gas chromatography of bisabolene isomers, 767.
- Reggio, R. B. See Skipski, V. P., 2042.
- Register, J. W., jun. See Bollinger, J. N., 514.
- Regosz, A. See Ellert, H., 929.
- Rehberger, A. J., and Cuzner, J. Determination of  $\alpha$ - and  $\beta$ -acids and residual solvents in commercial hop extracts, 968.
- Rehnberg, G. L. See Strong, A. B., 2166.
- Rehse, K. Analysis of drugs by NMR spectrometry: detection and determination of methylxanthines in the presence of sodium salicylate and sodium benzoate, 918.
- Rehwoldt, R. E., and Treinen, M. Polarographic determination of calcium by using 2-chloro-5-cyano-3,6-dihydroxybenzoquinone, 58.
- Reich, W. See Halpaap, H., 2.
- Reid, W. K., and Mead, W. L. Use of multiplet peaks in the examination of high-molecular-weight petroleum fractions, 2849.
- Reilly, D. A. Determination of 4-aminobiphenyl in refined aniline, 248.
- Reimpell, J. Precision, sorting and checking balances, 2237.
- Reinhard, C. Determination of protham and chlorprotham in potatoes, 1586.
- Reinhard, R. See Koch, O. G., 38.
- Reinisch, G., and Dietrich, K. Analysis of polycaprolactam. I. Determination of water in polycaprolactam, 1384.
- Dietrich, K., and Bara, H. Analysis of polycaprolactam. II. Determination of caprolactam and oligomers in polycaprolactam, 1971.
- Reis, A. See Büger, P., 2335.
- Reith, J. F. See Drost, R. H., 2602.
- Rekkholainen, G. I., and Ivanova, L. I. X-ray fluorescence analysis of solutions of the cerium group of rare-earth metals, 2396.
- Rekker, R. F. Accuracy of spectrophotometric two-component analyses: implications for the determination of cyclandelate, 3224.
- Remijnse, A. G. See Ligny, C. L. de, 2.
- Remmers, V., Schmitt, H., Solbach, H. G., Staib, W., and Zimmermann, Horst. TLC separation of testosterone and  $17\alpha$ -hydroxyandrost-4-en-3-one, 3150.
- Remy, P., Dirheimer, G., and Ebel, J. P. Separation of mono-, pyro- and tri-phosphates of nucleosides by TLC, 1475.
- Renkonen, O. Chromatographic separation of plasmalogen alkyl-acyl and diacyl forms of ethanolamine glycerophosphatides, 2628.
- Renner, J. A. See Bondarovich, H. A., 963.
- Renouprez, A. J. See Donati, J. R., 1730.
- Répas, P. See Szebenyi, I., 664.
- Reřicha, R., and Horák, M. Determination of the degree of branching in alkanes by infra-red spectroscopy. III. Analytical application, 3051.
- Reshchikova, A. A., Medvedova, Z. S., and Dmitriev, G. F. Determination of the main components of semiconductor compounds of boron with arsenic or phosphorus, 2909.
- Ressler, N., and Whitlock, L. S. Applications of computer-produced frequency-distribution curve. I. Quality control, 791; II. Evaluation of the diagnostic significance of test results by multidimensional analysis, 791.
- Reszko-Turska, W., and Walicka, T. Determination of theophylline, caffeine and ephedrine hydrochloride in Belladrenal tablets, 3199.
- Reusser, P. Method for the bio-autography of thin-layer chromatograms, 435.
- Reuter, A. Detection of olefinic double-bonds by quantitative micro-hydrogenation, 206.
- Reva, N. I. See Chuiko, V. T., 1280.
- Revvagina, K. I. See Popova, T. P., 3111.
- Revvakina, G. N. See Kaplan, B. Ya., 2330.
- Reyden, A. J. van der, and Polman, R. J. Determination of traces of calcium and barium sodium hydroxide, 562.
- Reymond, D. See Müggler-Chavan, F., 1095.
- Reynolds, G. T. Scintillomicroscope for radioactive tracer detection, 3362.
- Rezakova, Kh. S. See Kaplan, B. Ya., 2330.
- Rhoads, C. A. See Guroff, G., 906.
- Ribbons, D. W., Hewett, A. J. W., and Smith, F. Apparatus for simultaneous spectrophotometric and polarographic measurements, 2823.
- Ricci, E., and Hahn, R. L. Calculation of sensitivities, interferences and optimum bombardment energies in activation analysis with helium-1711.
- Rice, D. D. Direct-transfer technique for preparing micro pellets from thin-layer chromatograms for infra-red identification, 1636.

- rice, E. W. Rapid determination of total haemoglobin as cyanomethaemoglobin in blood containing carboxyhaemoglobin, 331.
- rice, J. O. See Smith, A. J., 3093.
- Richard, K. A. See Roboz-Einstein, E., 2085.
- Richardson, A. C. See Fauth, N. I., 1400.
- Richter, G., and Hauenstein, H. Chemical evaluation of senna drugs, senna extracts and preparations by separate determinations of anthraquinone glycosides and aglycones, 1506.
- Richter, K. E. See Froberg, M. G., 648.
- Richter, M., and Schierbaum, F. Determination of starch in cereal products, 3243.
- Richter, P. X-ray spectrographic determination of potassium and calcium in standard rocks: fusion techniques, 1138.
- Richterick, R. See Bürgi, W., 2028.
- Ridal, K. A. See Durnin, J., 2473.
- Diečanská, E. See Majer, J., 2327.
- Riedl, W., and Kellner, M. Substances present in yeast heads. II. Determination of fatty acid constituents, 1565.
- Riemann, W., III. See Leitch, R. E., 3071.
- Rigby, F. L., and Stoffer, J. Determination of  $\alpha$ - and  $\beta$ -acids in non-isomerised hop extracts, 967.
- Rigby, W. See Hunt, B. J., 1036.
- Righetti, P., De Luca, L., and Wolf, G. Radio-metric assay for arginase, 2675.
- Rigin, V. I., Mel'nichenko, N. N., and Yanitskii, V. K. Spectrophotometric determination of micro amounts of selenium in high-purity metallic germanium and germanium dioxide by reaction with 4-hydrazinobenzenesulphonic acid, 615.
- Rijnders, G. W. A. See Sie, S. T., 1642, 1873.
- Riley, B. P. See Bubel, H. C., 2774.
- Riley, L. B. See Haffty, J., 1886.
- Riley, M. V. Separation of carbon-14-labelled glucose and lactate, 2613.
- Rimington, C., and Benson, A. Partition of porphyrins between cyclohexanone and aqueous sodium acetate as a function of pH: determination of uroporphyrin and hydrophilic porphyrin conjugates in urine, 2092.
- Rinderknecht, H., Geokas, M. C., Silverman, P., and Haverback, B. J. Determination of elastolytic activity in blood of normal subjects and patients with acute pancreatitis, 2123.
- Geokas, M. C., Silverman, P., Lillard, Y., and Haverback, B. J. Determination of pancreatic lipase, 2674.
- Wilding, P., and Haverback, B. J. Determination of  $\alpha$ -amylase, 345.
- Riner, J. C. See Wright, F. C., 1015.
- Riolo, C. B. See Bertoglio Riolo, C.
- Ripstein, S. See Bäuml, J., 1422.
- Rivarola, E. See Lassandro Pepe, B., 2529.
- Rivera, C. B. de. See Bou de Rivera, C.
- Rivlin, J. See Ramanathan, S., 3102.
- Rixon, E. C. See Welshman, S. G., 2107.
- Rizzardi, G. See Bertazzi, N., 24.
- Roach, A. G., Sanderson, P., and Williams, David Rowland. Determination of copper, zinc and magnesium in animal feeds by atomic-absorption spectrophotometry, 2212.
- Robbins, J. D., and Bakke, J. E. Method for collecting carbon-14 dioxide from a hydrogen-flame detector, 449.
- Robert, L. See Moczar, E., 1459.
- Roberts, D. R. Use of the solid-sample technique for direct gas-chromatographic analysis of pine oleoresin, 2610.
- Roberts, G. A. H. Exchange reactions on columns, 2093.
- See also Belcher, R., 1045.
- Roberts, J. E. Turbidimetric titration of fluoride with neodymium<sup>III</sup>, 1251.
- Roberts, W. K. See Nestle, M., 2657.
- Robertson, R. K. See Brook, A. J. W., 1530.
- Robertson, W. W. See Wellenstein, H. F., 3336.
- Robin, Y., and Nguyen Van Thoi. Application of chromatography to the study of natural guanide derivatives and phosphagens, 854.
- Robins, C. H. See Furr, A. K., 3361.
- Robinson, D. W. See Kozak-Fabierkiewicz, C., 1417.
- Robinson, Donald W. GLC determination of ethchlorvynol in urine and serum, 2011.
- Robinson, E. L. See Furr, A. K., 3361.
- Robinson, J. W., Loftin, H. P., jun., and Truitt, D. Construction of de-mountable hollow-cathode lamps for stimulating emission of organic compounds, 3327.
- See also Ramakrishna, T. V., 2896.
- Robinson, L. R., jun., Dixon, R. A., and Breland, E. D. Determination of manganese in water by atomic-absorption spectrophotometry, 3278.
- Robinson, R. See Baer, E., 1440.
- Robinson, S. M. See Blatt, W. F., 877, 2247.
- Roboz-Einstein, E., Richard, K. A., and Cerutti, P. Determination of  $\gamma$ -globulin in human sera by column chromatography, 2085.
- Robson, A., Williams, M. J., and Woodhouse, J. M. AutoAnalyzer determination of lanthionine and lysinoalanine, 1382.
- Roch, B. See Mihai, F., 1749.
- Roch, G. See Lederer, M., 1598.
- Roch-Ramel, F. Enzymic-fluorimetric determination of urea in nanolitre specimens, 1448.
- Rocke, R. A., and Rasmussen, K. L. Ultra-micro fluorimetric determination of leucine aminopeptidase in serum, 914.
- Rodgers, R. C. See Alexander, D. E., 397, and Collins, F. I., 1548.
- Rodkey, F. L. See Collinson, H. A., 2593.
- Roelgen, F. W. See Beckey, H. D., 2831.
- Rogers, A. R. See Clements, J. A., 1511.
- Rogers, G. T. See Hughes, J. D. H., 69.
- Rohdewald, I. See Knappe, E., 727.
- Rohrschneider, L. Rules for the selection of liquids as stationary phases in GLC, 3.
- Rojowska, M. See Soczewiński, E., 2644.
- Rolle, W., and Hübner, H. Single-step conversion of organic compounds into hydrogen for mass-spectrometric determination of deuterium, 698.
- Rollier, M. A. See Maxia, V., 885.
- Rollins, O. W., and Haynes, B. J. Determination of gallium in molybdo- and tungsto-gallates by titration with EDTA, 77.
- Roman Ceba, M. See Capitán García, F., 533, 606.
- Romand, J. See Castex, M.-C., 3332.
- Romani, R. J., and Fisher, L. K. System for monitoring density gradients, 1033.
- Romano, A. jun. See Egli, K. L., 2144.
- Romanov, P. N. See Savvin, S. B., 1273.
- Romel, W. C., LaManusa, S. J., and DuFrene, J. K. Detection of serum alkaline phosphatase isoenzymes with phenolphthalein monophosphate after cellulose acetate electrophoresis, 2119.
- Romminger, K. See Hoppe, H., 385.
- Roncucci Fiorani, L. See Faraglia, G., 741.
- Ronkainen, P., Arkima, V., and Soumalainen, H. Identification of carbonyl compounds in beer, 972.
- Roodyn, D. B. Improved multi-enzyme analyser, 2104.
- Roos, A. M. de. Control of pharmaceuticals. VIII. Infra-red spectra of substituted diphenhydramine hydrochlorides, 360.



- Roosels, D., and Vanderkeel, J. V.** Atomic-absorption determination of lead in urine after extraction with dithizone, 3129.
- Root, D. F.** See **Laver, M. L.**, 1966.
- Roper, R.** See **Ma, T. S.**, 2126.
- Röpke, H.** See **Hartmann, E.**, 941.
- Rork, G. D., and Consoliver, R. E.** Electron-probe surface-scanning mass spectrometer, 3338.
- Rorschach, H. E., jun.** See **Antcliffe, G. A.**, 3365.
- Rosa-Brusin, M., Franceschetto, M., and Andréu, P.** Measurement of small time-intervals in micro-catalytic reactors and in gas chromatography, 1646.
- Rosenbergerová, D., and Kráčmar, J.** Spectrophotometric study of cytostatics based on phosphoric or phosphinic acid, 1526.
- Rosenfeld, R. S.** See **Fishman, J.**, 2052.
- Rosenkranz, H. S., and Rosenkranz, S.** Study on adsorption of nucleic acids by charcoal, 894.
- Rosenkranz, S.** See **Rosenkranz, H. S.**, 894.
- Rosmus, J.** See **Deyl, Z.**, 864.
- Rosmus, P., Kunz, D., and Mayer, R.** Polarographic reduction of thioanilide and thioanilide S-oxide groups, 211.
- Rosnecká, J.** See **Večerková, J.**, 3137.
- Rosotte, R.** Spectrophotometric determination of vanadium in steel, 158.
- Ross, H. H.** Analytical applications of the secondary effects of radiation: precision photometry using a radio-isotopic light source, 2299.
- Ross, H. P.** See **Hunt, G. R.**, 476.
- Ross, R.** See **Baron, R. L.**, 2190.
- Ross, W. D., and Sievers, R. E.** GLC determination of picogram amounts of beryllium, 1787.
- See also **Butler, J. M.**, 2494.
- Rossi, G.** See **Omenetto, N.**, 2872.
- Rössner, E.** See **Wirsig, M.**, 565.
- Rossouw, A. J.** See **Ho-Tun, E.**, 2811.
- Roszel, N. O.** See **Savory, J.**, 2609.
- Roth, J. A.** See **Agee, J. E.**, 1816.
- Roth, K.** See **Oberländer, H.-E.**, 2738.
- Roth, M. E.** See **Ramírez-Muñoz, J.**, 3020.
- Rothbart, H. L.** See **Leitch, R. E.**, 3071.
- Rothmann, H.** Kjeldahl determination of nitrogen in chromium, 652.
- Rothschild, C.** See **Dische, Z.**, 303.
- Rotin, V. A.** Problems in the theory of argon and helium detectors for gas chromatography, 1069.
- Rotman, Y., and Fields, M. L.** Reagent for determination of pyridine-2,6-dicarboxylic acid, 2070.
- Rottschäfer, J. M.** See **Eisner, U.**, 492.
- Rouchaud, J.** GLC analysis of the oxidation products from light petroleum gas, 2548.
- Roughan, P. G., and Batt, R. D.** Determination of a sulpholipid (sulphoquinovosyl diglyceride) and galactolipids (monogalactosyl and digalactosyl diglycerides) in plant tissue, 2046.
- Routti, J. T.** Graphical calculation of activity levels produced in thermal- and fission-neutron irradiation, 3358.
- Rovinskii, F. Ya.** See **Sinitšin, N. M.**, 170.
- Rowe, M. L.** Determination of hexahydro-1,3,5-trinitro-1,3,5-triazine in octahydro-1,3,5,7-tetra-nitro-1,3,5,7-tetrazocine, 279.
- Rowe, M. W.** See **Clark, R. S.**, 189.
- Rowland, F. W.** Selection of solvents for characterisation of polymers by light-scattering photometry, 3107.
- Rowland, S. P.** See **Cirino, V. O.**, 2564.
- Rozenberg, G. I., and Kuznetsov-Fetisov, L. I.** Gas-chromatographic analysis of the nitrogen-nitrous oxide system, 1205.
- Rozenfel'd, É. I.** See **Bruk, B. S.**, 2319.
- Rozhdestvenskaya, Z. B.** See **Songina, O. A.**, 2360.
- Rozsa, J. T., and Wall, F. E.** Vacuum-spectrometric determination of boron in low-alloy steel, 2466.
- Rózycki, C.** See **Grzegorzówka, E.**, 590.
- Rózyło, J.** See **Waksmundzki, A.**, 2.
- Rubaltelli, F. F.** See **Pittoni, A.**, 2097.
- Rubeška, I.** Determination of trace elements in sulphide minerals by atomic-absorption spectrophotometry with use of absorption-tubes, 3043.
- Rubin, M., and Knott, L.** Enzymic-fluorimetric determination of ammonia, 2063.
- Rubinskaya, T. Ya.** See **Gallai, Z. A.**, 3014.
- Ruddlesden, S. N.** Applications of the electron-probe micro-analyser to ceramics. I. Potentialities of the instrument, 1294.
- and **Airey, A. C.** Applications of the electron-probe micro-analyser to ceramics. II. Analysis of defects in ware, 1294; III. General research problems, 1294.
- Rudenko, B. A.** See **Paukov, V. N.**, 1956.
- Rud'ko, B. F., Gozhenko, N. A., Krinitsyna, N. A., and Tishchenko, E. I.** Extraction-absorption metric determination of small amounts of moisture in powdered solid substances, 1130.
- Rudnev, N. A., Pavlenko, L. I., and Malofeeva, G. I.** Spectrochemical determination of silver, zinc, copper, cadmium, lead and gold in indium phosphide, 2389.
- Rudnevskii, N. K., Maksimov, D. E., and Vysotskii, V. V.** Spectrographic determination, with use of a hollow-cathode discharge, of hyper-stoichiometric amounts of sulphur and cadmium in cadmium sulphide, 1790.
- Rudolph, A.** Column-chromatographic determination of amino-acids in the presence of heavy metal cations, 1451.
- Rudolph, G. G., Holler, J. J., jun., and Ford, W.** Determination of calcium in serum and urine, 80.
- Rudolfi, M.** See **Kiermeier, F.**, 390.
- Rudy, E.** See **Haack, A.**, 2240.
- Rüegg, R.** See **Vetter, W.**, 338.
- Ruinen, L., Scholten, J. H., and Mandema, J.** Determination of protein-bound hexosamines in serum, 2029.
- Rukhadze, E. G.** See **Terent'ev, A. P.**, 1103.
- Rumpf, H., and Alex, W.** Theory of decanting gravitational and centrifugal fields, 1733.
- Rumyantseva, L. S., and Teodorovich, I. L.** Determination of phosphates by amperometric titration, 2968.
- Rund, R. C.** See **Quackenbush, F. W.**, 5.
- Runge, E. F.** See **Bryan, F. R.**, 2474.
- Runnels, J. H., and Gibson, J. H.** Characteristic of low-wattage microwave-induced argon plasma in excitation of metals, 465.
- Runovskaya, I. V.** See **Agafonov, I. L.**, 2942, a.
- Devatykh, G. G.**, 613.
- Ruseva, N.** See **Koen, V.**, 3212.
- Russell, D. S.** See **Bednas, M. E.**, 756.
- Russell, R. S.** See **Houlbrooke, A.**, 1547.
- Rusu, V.** See **Ciuhandu, G.**, 1001.
- Rutenberg, E.** See **Anderson, N. G.**, 1034.
- Rutherford, W. M., Weyler, F. W., and Eck, C.** Apparatus for the thermal-diffusion separation of stable gaseous isotopes, 2250.
- Rutstein, D. D.** See **Simon, W.**, 1074.
- Rutloff, H., Friese, R., Täufel, A., and Täufel, H.** Determination of microbial glucosylase, 212.
- Ruybal, C. N.** See **Ellingboe, J. L.**, 243.
- Ruyle, C. D.** See **Gehrke, C. W.**, 2101.
- Růžicka, J.** See **Briscoe, G. B.**, 1791.



- Ruzicka, J. H. A., Thomson, J., and Wheals, B. B. GLC determination of organophosphorus pesticides. II. Comparative study of hydrolysis rates, 1588.  
— See also Mitchell, T. H., 2218.
- Ryabukhin, V. A. See Zarinskii, V. A., 1696.
- Ryan, D. E. See Cassidy, R. M., 2434, and Frei, F. W., 2341.
- Ryan, M. P., and Hingerty, D. Comparison of four methods for determining serum magnesium, 2590.
- Ryazanov, I. P. See Agafonova, V. I., 2981, and Lugovoi, S. V., 2147.
- Rydnik, V. I. See Borovskii, I. B., 1097.
- Rylance, H. J. See Haywood, P. E., 916.
- Rydzina, A. M. See Gordeeva, M. N., 2386.
- Ryzenko, V. L. See Zharovskii, F. G., 2382.
- S
- Á, A., Carducci, C. N., and Luis, P. Ultra-micro detection of nitrogen in organic substances, 1904.  
— See also Luis, P., 1741, 1927.
- Á, F., and Da Silva, M. E. Identification of azin-phosmethyl in human tissues and in figs, 1425.
- Á, L. M. de, and Nazário, W. TLC of the pesticide coumaphos in veterinary toxicology, 1424.
- Á, P. See Carnicelli, A., 2055.
- Ábbioni, E. See Bigliocca, C., 512.
- Abot, M. See Guiraldeng, P., 1875.
- achkova, N. F. See Larina, L. K., 48.
- adar, S. H. See Guibault, G. G., 3187.
- adof'eva, S. A., and Bogonosova, E. K. Spectro-chemical determination of silicon in germanium dioxide, hydrochloric acid and water, 2954.
- afra, D. R. See Jaster, W., 3318.
- ager, H. See Temperli, M., 3190.
- agredos, A. N. Determination of cyclic fatty acids on a urea column, 786.
- agera, J. L. Identification of elements in hydraulic cements by X-ray fluorescence, 694.
- aha, J. G. Comparison of methods for extracting carbon-14-labelled dieldrin from soil, 2744.
- aha, N. C. See Mitra, G. D., 1945.
- aha, S. C. See Majumdar, A. K., 2958.
- ahasranaman, S. See Awasthi, S. P., 128.
- ahores, J. Determination of major elements in rocks by X-ray fluorescence spectrometry, 2484.
- aijo, R. Volatile flavour of black tea. II. Examination of the first fraction of effluents in GLC, 962.
- aint-Firmin, A. R., and Paris, R. R. Determination of alkaloids of the atropine group by TLC, 1498.
- John, L. E., jun., and Lisk, D. J. Determination of hydrolytic metabolites of organophosphorus insecticides in cow urine by using an improved thermionic detector, 2608.
- John, P. A., McCarthy, W. J., and Winefordner, J. D. Statistical evaluation of limiting detectable sample concentrations, 1099.
- int-Yrieix, A., and Lesimple, C. GLC determination of traces of ammonia and methyl ether in trimethylamine, 733. Improvement of the effectiveness of GLC columns with PTFE supports: application to the analysis of polar compounds, 1064.
- ito, H., Mabuchi, T., Onaka, R., and Ikeo, B. Spectrophotometer for use in the short-wave u.v. region, 1664.
- ito, M. See Tōei, K., 1734.
- akai, H., Vanasse, G. A., and Forman, M. L. Spectral recovery in Fourier spectroscopy, 2284.
- kr, A. H. See Witting, L. A., 2626.
- kurai, S. See Takeuchi, T., 161.
- Salama, C., and Dunn, R. Infra-red quantitative analysis for phthalate ester in unmodified alkyd resin paints, 1392.
- Salam Khan, M. A., and Stephen, W. I. Silver reagent for use in the Walden silver reaction, 1740.
- Saleem, S. M. See Malik, W. U., 1952.
- Salietto, G. See Bighi, C., 1336.
- Salikhov, V. D., and Yampol'skii, M. Z. Spectrophotometric study of the interaction of indium with lumogallion, 1797.
- Salim, E. F., Deuble, J. L., and Papariello, G. Qualitative and quantitative tests for oxazepam, 2694.  
— and Örtenblad, B. Qualitative and quantitative tests for prilocaine hydrochloride, 2151.  
— See also Kurlanskik, L., 3229.
- Salin, A. A., Rannev, G. G., and Kogol', I. M. Anodic-stripping chronopotentiometry, 1697.
- Sallei, J.-P. See Dupuy d'Angéac, A., 2086.
- Sallmann, H.-P. See Harmeyer, J., 2074.
- Sal'nikova, K. S. See Kreshkov, A. F., 3008.
- Salt, F. J. See Cheong, F. H., 3132.
- Saltzman, B. E. See Scaringelli, F. P., 1595.
- Salvatore, F., Zappia, V., Pietropaolo, C., and Cottino, M. Determination of fumarate, 349.
- Salvi, A. See Cianetti, E., 1975.
- Samban, M. A. S. See Murthy, B. G. K., 3117.
- Samejima, M. See Kodama, T., 2103.
- Samish, Z. See Cohen, S., 379.
- Sammul, O. R. See Welsh, L. H., 1.
- Samociuk, B. See Butruk, E., 2059.
- Samosvat, L. S., and Verblyudova, N. I. Absorptiometric determination of xylenes in air, 1597.
- Sampaolo, A. See Camoni, I., 2746.
- Samsahl, K. Radiochemical determination of arsenic, bromine, mercury, antimony and selenium in neutron-irradiated biological material, 290. Automated neutron-activation analysis of biological material with use of high radiation levels, 3124.  
— Wester, P. O., and Landström, O. Automated group-separation system for the simultaneous determination of thirty-two elements in biological recovery and reproducibility studies, 1985.
- Samuel, D. See Amsel, G., 1224.
- Samuels, S. Automated quantitative spotting for analytical TLC, 3299.
- Samuelson, O., and Strömberg, H. Partition chromatography of mono-, di- and tri-saccharides on ion-exchange resins, 3.  
— and Thede, L. Automated ion-exchange chromatography of organic acids derived from carbohydrates in acetate media, 721.  
— See also Larsson, L.-I., 1967.
- Samuelsson, B. See Hamberg, M., 2035.
- Samuelsson, G. Laboratory-built amino-acid analyser and Aminex resin for accelerated analysis at low pressures of buffer, 2643.
- Samuilova, T. I. See Levina, N. S., 3120.
- Sanad, W. See Alian, A., 2853, 2975.
- Sánchez Moreno, L. See Buscaróns, F., 534.
- Sánchez-Pedreño, C. See Sierra, F., 1845.
- Sancho, J., Almagro, J., and Pujante, A. Polarographic behaviour of thorium<sup>IV</sup> in dimethyl sulphoxide, 1808.  
— and Pujante, A. Polarographic study of zirconium in dimethyl sulphoxide and in dimethyl sulphoxide plus 20% of water, 2418.
- Sand, J. R., and Huber, C. O. Direct titration of glycerol by constant-current potentiometry, 718.
- Sanders, W. N., and Berger, J. E. Measurement and significance of the Hammett acidity function in non-hydroxylic solvents, 493.

- Sanderson, P. See Roach, A. G., 2212.
- Sandler, S. See Varkey, T. J., 2506.
- Sandoval, A. See Fazio, T., 2189.
- Sandroni, S. See Geiss, F., 2.
- Sangal, S. P. Photometric determination of indium using Chrome Azurol S, 78.
- Sano, A. See Yoichi, Y., 351.
- Santa Ana, M.-A. See Donoso, G., 93.
- Santhanam, K. S. V., and Krishnan, V. R. Coulometric determination of phenylthiourea, mercaptoacetic acid and cysteine, 3073.
- Santi, N., and Peillon, E. Potentiometric determination of small amounts of sulphur-containing amino-acids in the presence of ascorbic acid, 3171.
- Santiago, M. See Schenk, G. H., 1314.
- Santo, J. del. See Gabay, J. J., 423.
- Santrucek, J. See Tolar, V., 145.
- Sapag-Hagar, M. See Morales-Malva, J. A., 886.
- Saporoovskaya, M. B. See Vitt, S. V., 2078.
- Sapozhnikova, E. V., Semochkina, L. G., and Barnashova, G. S. Colorimetric determination of pectic substances and polygalacturonase activity, 306.
- Saprykova, Z. A. See Popel', A. A., 1128.
- Sarang, D. A. See Athavale, V. T., 1094, 1692.
- Sardesai, V. M., and Manning, J. A. Determination of triglycerides in plasma and tissues, 2623.
- Sarkar, A. K., and Das, J. Determination of titanium and beryllium with benzoylacetonilide, 94. Gravimetric determination of mercury<sup>II</sup> and vanadium<sup>IV</sup> with benzoylacetonilide, 2903.
- Sarkar, J. M. See Ghosh, P., 3266.
- Sarma, B. V. S., Satyanarayana, D., and Rao, V. P. R. Spectrophotometric determination of molybdenum by using thiosulphate, 126.
- Sarma, G. R. See Baer, E., 1440.
- Sarma, P. V. R. B. See Rao, V. P. R., 1855.
- Sarnoff, E. See Schwartzman, G., 195.
- Sarrazin, G. See Munier, R. L., 866.
- Saršunová, M. Identification of (1-ethoxycarbonyl-pentadecyl)trimethylammonium bromide and other bacteriostats in eye lotions by TLC, 2700.
- Schwarz, Vladimir, Krasnec, L', and Chi, K. Separation of benzoic and salicylic acids and their salts, esters and complexes with purine bases, 3192.
- See also Konečný, J., 925.
- Sasaki, Yoshimi. Extractive titration of iron<sup>III</sup> with cupferron, with tiron as indicator, 1262.
- Sasaki, Yukiko. See Hashizume, T., 805.
- Saslaw, L. D., Chaney, N. A., and Waravdekar, V. S. Colorimetric assays for 8-azaguanine and 8-azaxanthine, 337.
- Sass, S. See Stutz, M. H., 2258.
- Sastri, M. N. See Prasad, T. P., 1785.
- Sastry, P. S. See Baer, E., 1440.
- Sasuga, H. Determination of metallic iron in reduced iron powder by X-ray diffractometry, 139.
- Sathe, R. M. See Athavale, V. T., 684.
- Sato, Katsuya, Matsui, M., and Ikekawa, N. Applications of gas chromatography. II. Analysis of triglycerides, 1572.
- Yamazaki, S., and Senju, K. Determination of gypsum in calcium sulphate hemihydrate by differential thermal analysis, 578.
- Sato, Kimitaka. See Kammori, O., 670, 1734.
- Sato, M. See Kamada, H., 154.
- Sato, S. See Kitano, Y., 114.
- Sato, T. Extraction of uranium<sup>VI</sup> from sulphuric acid solutions by dioctylamine, 2408.
- Satyanarayana, D. See Sarma, B. V. S., 126.
- Sauer, H. Specificity of the Shinoda test for flavanones, 891.
- Saunders, D., and Pecosk, R. L. Calculation of distribution coefficients in inorganic gel chromatography, 1743.
- Saunders, R. M. Separation of sugars on an ion-exchange resin, 1920.
- Savichev, E. I., and Shugurov, E. V. Spectrographic determination of microgram amounts of gold and silver in cyanide plating solution, 2890.
- Savill, N. G., and Wall, W. F. Differential thermal analysis at high pressures, 522.
- Savory, J., Sunderman, F. W., jun., Roszel, N. O., and Mushak, P. Determination of serum ethanol by GLC, 2609.
- Savvin, S. B., Dedkov, Yu. M., and Romanov, P. N. Determination of zirconium in high-alloy steels with picramine R and arsenazo III, 1273.
- See also Elinson, S. V., 2437, and Milyukova, M. S., 85.
- Sawamoto, H. See Fujinaga, T., 1115.
- Sawicki, E., and Carnes, R. A. Spectrophotofluorimetric determination of aldehydes with dimedone and other reagents, 1924.
- Engel, C. R., and Elbert, W. C. Chromatographic location and colorimetric determination of thiols, prolines and other free-radical precursors, 413.
- Engel, C. R., and Guyer, M. Oxidative determination of olefinic compounds with 3-methylbenzothiazolin-2-one hydrazone, 1596.
- Guyer, M., and Engel, C. R. Paper and thin layer electrophoretic separations of polycyclic and heterocyclic compounds, 755.
- See also Engel, C. R., 1005.
- Sawyer, D. T. See Brookman, D. J., 1917, Goolsby, A. D., 1843, and Hargrove, G. L., 2797.
- Sax, N. I. See Gabay, J. J., 423.
- Sax, S. M., Dorman, L., Libenson, D. D., and Moore, J. J. Design and operation of an expanded system of quality control, 280.
- Saxe, M. H. Detection of thiols by the Weiss ring-oven method, 209.
- Saxena, O. C. Direct titrimetric determination of molybdenum, 125. Volumetric micro-determination of tellurium<sup>IV</sup> or mercury<sup>II</sup>, 644. Titrimetric micro-determination of osmium, 128. Titrimetric micro-determination of phenazon, 1515.
- See also Srivastava, V. N. P., 1318.
- Saxena, R. S. See Mittal, M. L., 1171, 2448.
- Sayegh, J. F., and Vestergaard, P. Dry filling capillary columns for liquid chromatography, 1037.
- Sayre, D. F. See Anton, A. H., 861.
- Sazikova, G. B. See Dobkina, B. M., 1842.
- Sazonov, M. L. See Bodrina, D. E., 2344.
- Scaife, J. F. Micro-determination of calcium thymus tissue by using glyoxal bis-(2-hydroxyanil), 800.
- Scallen, T. J., and Krueger, W. NMR and spectra of 24-ene and 24-saturated steroids, 263.
- Scapini, G., and Condorelli, P. Gas-chromatographic determination of acidic hydrolysis rates of the amides, 1942.
- Scarborough, J. M., Bingham, C. D., and DeVries, P. F. Determination of trace metallic impurities in high-purity sodium by atomic-absorption spectrophotometry, 41.
- Scaringelli, F. P., Saltzman, B. E., and Frey, S. Spectrophotometric determination of atmospheric sulphur dioxide, 1595.
- Schaap, W. B. See Shults, W. D., 495, 1689.
- Schabert, J. C., and Potgieter, D. J. J. Thin-layer and improved paper-chromatographic methods for the separation of cucurbitacin B and 23-dihydrocucurbitacin B, 850.



- Schächtev, O. See Foa, E., 508.
- Schade, W. Column chromatography of peptides and dinitrophenyl derivatives of mixed peptides from silk fibroin, 3.
- Schaefer, E. A., and Hibbits, J. O. Determination of moisture sorbed on sintered thorium dioxide by a coulometric electrolytic measurement with electronic integration, 1765.
- Schafer, H. N. S. Improved spectrophotometric determination of sulphate with barium chlor-anilate as applied to coal ash and related materials, 1292.
- Schaffner, C. P. See Maehr, H., 923.
- Schallis, J. E. See Kahn, H. L., 2860.
- Schaudy, R., Kiesel, W., and Hecht, F. Neutron-activation analysis for elements in meteorites, 178.
- Schaumburg, K. See Deverell, C., 1132.
- Schaumlöffel, E., Belzer, H., and Graul, E. H. Determination of tritium-labelled compounds on paper chromatograms by in-phial combustion of strips, 1046.
- Schedling, J. A. See Hauck, H., 1732.
- Scheer, K. E., Krauss, O., and Varga, L. Neutron-activation analysis for the determination of thorium oxide in tissue samples, 1426.
- Scheibe, F. Chromatographic separation of alkali-metal ions from cation exchanger Wofatit KPS: separation of potassium, rubidium and caesium ions, 1770. Elution - chromatographic separation of alkali-metal ions on Wofatit KPS: separation of lithium, sodium and potassium ions, 2353.
- Scheidegger, U. Cycloidal mass spectrometer, 2849.
- Scheig, R. See Alexander, N. M., 2646.
- Scheller, K. See Becsey, J. G., 1680.
- Schenk, G. H., and Bazzelle, W. E. Study of cerium<sup>IV</sup> - thallium<sup>I</sup> reaction, and analysis of thallium<sup>I</sup> mixtures by kinetic differences, 1804.
- and Santiago, M. Study of the quantitative nitration of alcoholic hydroxyl groups, 1314.
- Schersten, B., and Tibbling, G. Fluorimetric enzymic determination of normal concentrations of urinary glucose, 2027.
- Scherz, H., Stehlik, G., Bancher, E., and Kaendli, K. TLC of carbohydrates: review, 2850.
- Schierbaum, F. See Richter, M., 3243.
- Schivelbein, H., and Buchfink, E. Enzymic assay of free and conjugated 3-hydroxyanthranilic acid in urine, 859.
- Schildknecht, H. See Maas, K., 3.
- Schill, G. See Lindén, E., 1499.
- Schillinger, G. See Moczar, E., 1459.
- Schiltz, J. C. See Coulomb, R., 2397.
- Schinkmannová, L. See Deyl, Z., 864.
- Schirmer, W. See Grossmann, A., 2504.
- Schkolnick, L. J. Infra-red windows for ultra-high-vacuum use, 2305.
- Schlicke, H. H. See Domagk, G. F., 2639.
- Schlitt, H. See Geiss, F., 2, 3, 2796.
- Schlünz, M., and Köster-Pflugmacher, A. X-ray fluorescence determination of germanium in organic and inorganic compounds, 205. X-ray fluorimetric determination of small amounts of arsenic in slag, 2476.
- Schmahl, N. G. See Barthel, J., 1718.
- Schmid, E. Chemistry of plutonium with special reference to its analysis, 84.
- Schmid, H. H. O., Jones, L. L., and Mangold, H. K. Detection and isolation of minor lipid constituents, 933.
- Schmidt, H. E. Determination of tocopherols in oils and fats, 2733.
- Schmidt, J. See Schöllner, R., 781.
- Schmidt, Klaus, and Staude, H. Fluorimetric micro-determination of thallium in alkali-halide single crystals, 2876.
- Schmidt, Krystyna. See Żurawski, P., 3215.
- Schmidt, P. J. See Donaldson, E. M., 3152.
- Schmidt, W. See Naumann, R., 3036.
- Schmitt, H. See Remmers, V., 3150.
- Schmitt, R. A., and Smith, R. H. Determination of silicon in meteoritic chondrules by neutron activation, 182.
- Schmitz, K.-H. See Dickens, P., 666.
- Schmuckler, G. See Segall, E., 577.
- Schneider, A. See Warren, R. W., 2542.
- Schneider, G. Detection of imipramine and some of its metabolites on paper chromatograms, 1518.
- Schnepper, D. H. See Butts, T. A., 1012.
- Schnetzler, C. C., Thomas, H. H., and Philpotts, J. A. Determination of rare-earth metals in rocks and minerals by a mass-spectrometric stable-isotope-dilution technique, 1175.
- Schofield, C. E., Davison, V. L., and Dutton, H. J. Analysis for geometrical and positional isomers of fatty acids in partially hydrogenated fats, 983.
- Scholler, R., and Dehennin, L. Analysis of steroidal hormones by gas chromatography, 848.
- Schöllner, R. Separation of the oligomers of polyesters of the type alkanediol - alkanol - dicarboxylic acid, 780.
- and Schmidt, J. Separation of linear and non-linear oligomers of the polyester type by means of urea adducts, 781.
- Scholten, J. H. See Ruinen, L., 2029.
- Schomburg, G., and Henneberg, D. Analysis of mixtures of iso-hydrocarbons by 'methylene insertion' or 'methylene-hydrogen-2 insertion' reactions with gas chromatography - mass spectrometry, 3. Retention behaviour of compounds containing isotopes by application of an isotope-scan method within a combination of capillary gas chromatography and mass spectrometry, 2505.
- Schöne, K. See Holzapfel, H., 640.
- Schor, J. M. See Pfeffer, M., 2020.
- Schorn, P. J. See Stahl, E., 352.
- Schoumacker, C., Merciny, E., and Duyckaerts, G. Separation of americium and curium by ion exchange with HEDTA. III. Influence of the concentration of the HEDTA on the separation factor and on the efficiency of the column, 1184.
- Schrenk, W. G. See Marshall, D., 2985.
- Schröder, I. Solvent systems for amino-acid analysis by paper chromatography, 2075.
- Schroeder, H. A. Detection of *o*-dihydroxy-aromatic compounds, 745.
- Schroepfer, G. J., jun. See Paliokas, A. M., 2631.
- Schuckert, R. J. See Gordon, C. F., 408.
- Schuhmann, H. See Liebmann, R., 1052.
- Schuller, P. L. Detection of stilboestrol in urine by TLC, 816.
- and Veen, E. Preservatives: review of methods of analysis, 382.
- Schultz, O.-E., and Comberg, R. Relationship between paper-chromatographic results and separability on cellulose columns, 2256.
- Schultze, D. See Grosskreutz, W., 597.
- Schulz, D. See Kirsch, W. M., 289.
- Schulz, W. B. T. Automated analysis of milk products and milk with the Technicon Kjeldahl analyser. I. Determination of nitrogen, 374.
- Schulze, H. J., and Hilbig, G. Influence of the suspending medium on particle size distribution parameters determined by light absorption, 3372.
- Schulze, W. Measurement of  $\gamma$ -peak areas: application to activation analysis, 3360.



- Schurer, K., and Stoelhorst, J. Device for stabilising the output of a high-pressure xenon arc, 463.
- Schuster, C. F., Shannon, G. R., and Brown, H. D. Controlled-temperature bath for rotary-type fraction collector, 425.
- Schuster, G. See Truhaut, R., 2133.
- Schwartz, B. E. See Janicki, C. A., 3219.
- Schwartz, D. P., and Brewington, C. R. Isolation and characterisation of constituents of natural products. V. Separation of 2,6-dinitrophenyl-hydrazone pyruvamides into classes and separation of the individual members, 1337.
- Schwartz, E., and Nathan, D. G. Counting of haemoglobin and haemin labelled with carbon-14, 1468.
- Schwartz, J. H. Apparatus and procedure for developing thin-layer plates under nitrogen, 434.
- Schwartzman, G., Sullivan, D., and Sarnoff, E. Detection of solvents by i.r. spectrophotometry, 195.
- Schwarz, Victor. See Kumar, S., 1041.
- Schwarz, Vladimir. See Šaršunová, M., 3192.
- Schwarz-Bergkamp, E. Study of combustion of organic substances in empty tubes at high temperature, 695.
- Sciara, J. J. See Tuesley, S. P., 3191.
- Scobell, H. D. See Huber, C. N., 2031.
- Scott, C. G. See Primavesi, G. R., 1056.
- Scott, R. H., and Butler, L. R. P. Modulator for hollow-cathode lamps used in atomic-absorption spectrophotometry, 1660.
- Scott, R. W., Moore, W. E., Effland, M. J., and Millett, M. A. Ultra-violet spectrophotometric determination of hexoses, pentoses and uronic acids after their reactions with concentrated sulphuric acid, 302.
- Scott, V. D. See Ranzetta, G. V. T., 47, 1655.
- Scroggie, L. E. See Zittel, H. E., 2932.
- Scroggs, R. E. See Koons, J. R., 1580.
- Seager, H. See Kaye, R. C., 3369.
- Seaton, J. C. See Aitken, R. A., 970.
- Sebban, R. Determination of non-ionic detergents containing long polyethoxy-chains, 3098.
- Seco, J. L. J. See Jiménez Seco, J. L.
- Sedivec, V., and Flek, J. Device for automated exponential programming of the inlet pressure of the carrier gas in GLC, 3305.
- Sedláček, B. A. J. Studies on the u.v. spectra of autoxidised fats, 3259.
- Sedlenskii, R. V. See Kirillova, R. P., 622.
- Sedova, I. V. See Mýshlyayeva, L. V., 2941.
- Seeger S., B. See Barra F., T., 1807.
- Seegmiller, J. E. See Klinenberg, J. R., 336.
- Seely, J. H., Petitolero, J. C., and Benoiton, L. Interference by protein and amines in the determination of ammonia by the isocyanurate method, 287.
- Segal, S. See Fischl, J., 912.
- Segall, E., and Schmuckler, G. Interaction of Dowex A-1 chelating resin with sparingly soluble calcium salts, 577.
- Seguin, L., and Arnal, M. Analysis of hair-waving preparations, 770.
- Seguro Serra, A. See Serra, A. S.
- Seher, A. Studies on frying fats: determination of oxidised fatty acids, 392.
- and Búrjes, G. Determination of caesium-137 in oil-bearing seeds and fruits, 3258.
- Sehgal, S. N., and Vezina, C. Automated fluorimetric assay of antimycin A, 356.
- Schmel, G. A. Particle size distribution function for data recorded in size ranges, 3371.
- Seibert, E. E. See Johnson, H. W., jun., 2778.
- Seidel, R. See Fecko, J., 930.
- Seip, W. F., Carski, T. R., and Kramer, D. N. Electromechanical assay of heparin *in vitro*, 920.
- Seirmarco, J. A. See Peart, R. F., 1818.
- Seitz, C. A., and Churchwell, S. E. Chromatographic determination of helium in 'conservation' gas streams, 546.
- and Emerson, D. E. Determination of the volume of closed containers, 2239.
- Šekowska, B. See Młodecka, J., 3185.
- Seleznova, E. A. See Zhivopistsev, V. P., 2355.
- Self, R. Flavour research with a fast-scanning mass spectrometer, 2849.
- Selig, W. Improved end-point for the determination of fluoride with thorium nitrate, 2452.
- Fluorine analysis of plastic-bonded explosives and fluorinated plastics, 3122.
- Sells, B. H. See Groves, W. E., 2651.
- Selzer, G. B. See Bracey, A., 3200, and Howlett, M. R., 922.
- Semb, A. See Kirkbright, G. E., 3329.
- Semenova, L. N. See Lebed', N. B., 2378, and Pantaler, R. P., 2376.
- Semenovskaya, E. N. See Shakhova, Z. F., 1828.
- Semmel, M. G. See Pfeffer, M., 2020.
- Semochkina, L. G. See Sapozhnikova, E. V., 306.
- Semochkina, T. V. See Pats, R. G., 1235, 1236.
- Semov, M. P. See Zil'bershtein, Kh. I., 2944.
- Senanayake, U. M., and Wijesekera, R. O. B. Micro-method for separation, identification and determination of caffeine, theobromine and theophylline, 2197.
- Senda, M., Izutsu, K., and Takahashi, R. [Annual review, 1967]—Polarographic analysis, 1734.
- Senegačnik, M., and Paljk, Š. Fall-out analysis of atmospheric water precipitations. I. Determination of caesium-137, strontium-89 and strontium-90 by ion exchange, 1016.
- Paljk, Š., and Južnič, K. Fall-out analysis of atmospheric water precipitations. II. Determination of cerium-144, caesium-137, strontium-89, strontium-90 and barium-140 by ion exchange, 1600.
- Senf, H.-J. Use of chelating agents in inorganic TLC, 20.
- Senju, K. See Sato, Katsuya, 578.
- Senkowsky, B. Z. See Mahn, F. P., 2160.
- Serebryakova, T. I. See Lyutaya, M. D., 2910.
- Serebryanij, B. L. See Rakovskij, E. E., 2889.
- Sergeant, G. A. See Evans, W. H., 657.
- Sergeeva, V. N. See Jaunzems, V., 2538.
- Serpinet, J. Applications and limitations of gas chromatography, 3.
- Serra, A. S. Determination of mercury in urine by a dithizone method, 286.
- Setser, J. L. See Cohen, J. B., 3274.
- Ševčík, S., Štamberg, J., and Kupec, J. Universal azeotropic-distillation device, 2773.
- Servryukov, N. N. See Khasan, M. Z., 79.
- Servyan, T. K. See Danielova, L. T., 1415.
- Seydell, J. K. See Garrett, E. R., 1922.
- Shabalkin, V. A. See Veretil'nyi, A. Ya., 2830.
- Shabana, R. See Alian, A., 2931, 2975.
- Shackleton, C. H. L., and Mitchell, F. L. Determination of  $\beta$ -hydroxy-5-ene steroids in human foetal blood, amniotic fluid, infant urine and adult urine, 2061.
- Shadoff, L. A. Detection of 'non-existent' molecular ions, 1677.
- Shafizadeh, F. See Laver, M. L., 1966.
- Shain, I. See Wopschall, R. H., 500.
- Shakhova, Z. F., Semenovskaya, E. N., Sokovikova, N. K., and Koval'chuk, V. A. Determination of hafnium in the presence of large amounts of molybdenum, 1828.

- Shakhtakhtinskii, G. B., Muradzade, F. I., and Aslanov, G. A.** Iodimetric determination of iron<sup>III</sup> in the presence of vanadium, 3018.
- Shakunthala, R.** See Gowda, H. S., 2853.
- Shalaginov, A. I.** See Afonin, V. P., 2815.
- Shalamova, G. G.** See Gusev, S. I., 2984.
- Shamaev, V. I.** Radiometric errors in different modifications of the isotope-dilution method, 1706. Sub-stoichiometric separation in isotope dilution with radiometric correction of the analytical results, 2870.
- Shamos, M. H., and Liboff, A. R.** Ionisation chamber technique for the measurement of environmental radiation, 3346.
- Shamshurin, A. A.** See Khariton, Kh. Sh., 2520.
- Shaner, W. C., jun.** See Smith, A. J., 3093.
- Shanina, T. M., Gel'man, N. É., and Mikhailovskaya, V. S.** Quantitative analysis of organo-elementary compounds: spectrophotometric micro-determination of boron, 204.
- Shannon, G. R.** See Schuster, C. F., 425.
- Shannon, T. W., Mead, T. E., Warner, C. G., and McLafferty, F. W.** Measurement and interpretation of metastable maps in mass spectrometry, 1678.
- Shapiro, L.** Indirect determination of fluorine in minerals and rocks, 186.
- Shapiro, M. Ya.** See Kasatkina, L. A., 1253, 3015.
- Shaposhnikov, Yu. K., Frontinskii, A. A., and Koroleva, V. S.** Gas-chromatographic determination of 2-furaldehyde in a trichlorobenzene extract of, e.g., wood hydrolysate, 1377.
- Sharipova, Sh. T., Dzhiyanbaeva, R. Kh., and Talipov, Sh. T.** N-Methylanabasine- $\alpha'$ -azo-1-naphthol-5-sulphonic acid as reagent for the absorptiometric determination of palladium, 3038.
- Sharkina, É. V.** See Ovcharenko, F. D., 430.
- Sharma, L. R., and Dutt, J.** Use of tubular platinum electrode for voltammetry in turbulent solutions, 2845.
- Sharma, S. P.** See Parihar, D. B., 789, 1399.
- Sharma, V. N.** See Chandra, D., 252.
- Shatkey, A.** See Frant, M. S., 2371, and Rechnitz, G. A., 2370.
- Shaw, A.** See Hooper, B. J., 1496.
- Shchegol'kov, S. V.** See Zakhariya, N. F., 2413.
- Shcherbak, I. F., Kovalenko, P. N., and Bagdasarov, K. N.** Electrochemical behaviour of bismuth, lead and mercury ions when they interact with zinc metal: determination of bismuth, lead and mercury in biological samples, 1899.
- Shchipanov, A. I.** See Kudryavtseva, N. A., 2551.
- Shchukina, V. S.** See Mustafin, I. S., 2963.
- Shchurova, L. M.** See Gusev, S. I., 2416.
- Shed, A. C.** Identification of hexamine by the mode of formation and profile angles of the reaction product between hexamine and mercuric chloride, 734.
- Shearer, D. A.** See Morris, G. F., 2205.
- Shearer, S. D., jun.** See Cohen, J. B., 3274.
- Shebs, W. T.** See Gordon, B. E., 1381.
- Shefter, V. E., Grigor'eva, L. V., and Dement'eva, M. I.** Porous glass as solid support in GLC, 3306.
- Shelankova, R. V.** See Leont'eva, K. D., 1140.
- Shelfoon, P.** See Duffy, J. R., 299.
- Shelkov, L. S.** See Betin, Yu. P., 1656.
- Shellard, E. J., and Alam, M. Z.** Quantitative determination of some *Mitragyna* oxindole alkaloids after separation by TLC. I. Ultra-violet spectrophotometry, 3203; II. Colorimetry by the Vitali-Morin reaction, 3203; III. Densitometry, 2.
- Shellard, E. J., and Jolliffe, G. H.** Identification of amino-acids in the presence of 50% glycerol on thin layers of silica gel, 865.
- **Phillipson, J. D., and Gupta, D.** Effect of methoxy-substitution and configuration on the TLC of some closed E-ring oxindole alkaloids, 3205.
- See also Jolliffe, G. H., 2, and Phillipson, J. D., 3204.
- Shelpakova, I. R.** See Prokhorova, S. A., 2976.
- Shemyakin, F. M.** See Bushev, A. I., 4.
- Shenoy, K. G.** See D'Souza, A. A., 1529.
- Shephard, F. W.** See Bondarovich, H. A., 963.
- Sheppard, A. J., Meeks, S. A., and Elliott, L. W.** Calibration studies of gas-chromatographic systems for quantitative analysis of fatty acid methyl esters. I. Molar response, 1931.
- **Prosser, A. R., and Elliott, L. W.** Calibration studies of gas-chromatographic systems for quantitative analysis of fatty acid methyl esters. II. Weight response, 1931.
- See also Hubbard, W. D., 2145, LaCroix, D. E., 2202, and Prosser, A. R., 1510.
- Sherine, R.** See Horton, R., 2054.
- Sherlock, D. R.** See Wilson, J. N., 1585.
- Sherma, J.** Ion-exchange paper chromatography of certain metal ions with aqueous organic wash-liquids, 23. TLC separation of chloroplast pigments, 1464.
- **Goldstein, D. A., and Gutai, J. P.** Separation of alkali-metal ions from each other and from other metal ions on ion-exchange papers, 1771.
- and **Strain, H. H.** Chromatography of leaf chloroplast pigments on ion-exchange papers, 2090.
- and **Zweig, G.** Separation of chloroplast leaf pigments by TLC on cellulose sheets, 1465. Chromatographic separation and identification of chloroplast pigments in *Chlorella pyrenoidosa*, 1466.
- Sherman, B. S.** Ultra-violet irradiation estimation of retinol and its derivatives: special reference to the unusual stability of retinoic acid, 2102.
- Sherman, F. B.** See Klimova, V. A., 1893, 1894.
- Sherman, M.** See Beck, J., 2024.
- Sherwin, K. A.** See Fisons Fertilizers Ltd., 3265.
- Sheskol'skaya, A. Ya.** Determination of large amounts of tungsten and molybdenum when present together, 127.
- Shestakov, G. I.** Determination of traces of uranium, thorium and lead in minerals with use of ion-exchange resins, 1289.
- Shestakov, V. P.** See Tananaseva, A. N., 1823.
- Shevchenko, F. D., and Kuzina, L. A.** Study of dihexyl phenylsulphonylphosphoramidate as an extractant. II. Extraction of barium, 59.
- Shevchuk, I. A., Skripnik, N. A., and Martsokha, V. I.** Extraction of fluoride complexes of iron<sup>III</sup> by using amines, 663.
- Sheyanova, F. R.** See Korenman, I. M., 2852.
- Shiba, T.** See Takizawa, K., 453.
- Shields, C. P.** See Toribara, T. Y., 3127.
- Shigematsu, T.** See Nishikawa, Y., 74.
- Shima, M., and Honda, M.** Determination of distributions of alkali, alkaline-earth and rare-earth metals in component minerals of chondrites, 180.
- Shimadate, T.** See Hosoyama, Y., 911.
- Shimanuki, T.** Spectrophotometric determination of phosphorus in ferrous alloys. III. Extraction - spectrophotometry of molybdoxovanadophosphate, 1274; IV. Determination of phosphorus in ferrovanadium, 1274.
- Shimbashi, T.** See Takizawa, K., 453.



- Shimizu, R. See Shinoda, G., 1097.
- Shin, Y. S. Quantitative paper chromatography of amino-acids, 863.
- Shinde, V. M., and Khopkar, S. M. 1,1,1-Trifluoro-4-mercapto-4-(2-thienyl)but-3-en-2-one as an extractant and colorimetric reagent, 7.
- Shindo, E. See Kambe, M., 537.
- Shinoda, G., Murata, K., and Shimizu, R. Electron-probe micro-analysis: scattering of electrons in metallic targets, 1097.
- Shinra, K. See Shono, T., 778, 1145.
- Shirai, K. See Tanaka, Motoharu, 1127.
- Shiraiwa, T., and Fujino, N. Theoretical calculation of fluorescent X-ray intensities of nickel-iron-chromium ternary alloys, 165.
- Shiryaeva, O. A. See Belikova, T. E., 630.
- Shiryaeva, O. I. See Kaplan, B. Ya., 2330.
- Shishkovskaya, N. G. See Potapov, V. M., 247.
- Shishoo, C. J. See Devani, M. B., 937.
- Shitikov, V. S., and Gedevevich, N. A. Determination of oxygen and nitrogen in ferrochrome by vacuum fusion, 1277.
- Shivahare, G. C., and Joshi, N. D. Potentiometric determination of rare-earth metals with sodium orthovanadate, 2398.
- Shively, B. G. See Meagher, W. R., 1562.
- Shivrin, G. N. See Laskorin, B. N., 1120.
- Shvirina, E. M. See Laskorin, B. N., 1120.
- Shkorbatova, T. I., and Pegusova, L. D. Polarographic determination of triazine azo-dyes in effluents, 1612.
- Shlenskaya, V. I. See Khvostova, V. P., 1286.
- Shlyakhov, V. I. See Neporent, B. S., 483.
- Shockman, G. D. See Thompson, J. S., 2611.
- Shodiev, F. Sh. See Basitova, S. M., 1865.
- Shoji, T. See Gotô, H., 3021.
- Shokanov, A. K. See Karavaeva, S. D., 1867.
- Shome, S. C. See Das, B., 2980.
- Shono, T., Inui, T., Yamashoji, Y., and Shinra, K. Spectrophotometric titration of 2,6-xyleneol with tetracyanoethylene, 778.
- Tanaka, Minoru, and Shinra, K. X-ray fluorescence determination of metals in metal chelates. I. Determination of copper, 1145.
- Shpak, E. A. See Pilipenko, A. T., 1874.
- Shreider, A. V. See Tomashov, N. D., 4.
- Shroff, A. P., and Huettemann, R. E. Determination of a chlorinated hydantoin by GLC, 936.
- Shugurov, E. V. See Savichev, E. I., 2890.
- Shull, K. E., and Guthan, G. R. Modified Eriochrome cyanine R determination of aluminium in water, 1010.
- Shul'man, V. M., Larionov, S. V., and Podol'skaya, L. A. Potentiometric study of the interaction of *OO*-diethyl phosphorodithioate with silver and mercury<sup>II</sup> ions, 2526.
- Shults, W. D., Fisher, D. J., and Schaap, W. B. Controlled-potential difference d.c. polarography. [III.] Comparative polarography, 495.
- and Schaap, W. B. Controlled-potential difference d.c. polarography. [IV.] Determine and statistical errors in comparative polarography: theory and experiment, 1689.
- See also Potterton, S. S., 625, and Stokely, J. R., 87.
- Shurlock, B. C. See Purnell, J. H., 438.
- Shuster, Ya. A., Zaitsev, P. M., and Antonenko, N. S. Spectrophotometric determination of platinum in the products of electro-synthesis of dimethyl sebacate, 3070.
- Shvangiradze, R. R., Oganezov, K. A., and Chikhladze, B. Ya. Determination of oxygen in metals and semiconductor materials by isotopic equilibration, 1225.
- See also Oganezov, K. A., 2329.
- Shvartsman, A. B. See Bokshtein, B. S., 1745.
- Shvedova, N. V. See Busev, A. I., 2431.
- Shvelkina, R. V. Absorptiometric determination of iodine in water, 1602.
- Šibalić, S. M., Adamović, V. M., and Miletić, N. Application of the ring-oven technique to the semi-quantitative determination of some anti-oxidants, 955.
- Sibiryakov, N. F. See Zhivopistsev, V. P., 2385.
- Siek Woo, W. See Won Sick Woo.
- Siderius, P. Drug regulations in the Common Market countries, 1.
- Sie, S. T., Bleumer, J. P. A., and Rijnders, G. W. A. Gas-chromatographic separation of inorganic chlorides and its application to metal analysis. II. Determination of silicon in iron and steel, 1873.
- and Rijnders, G. W. A. High-pressure GLC and chromatography with supercritical fluids. II. Permeability and efficiency of packed columns with high-pressure gases as mobile fluids under conditions of incipient turbulence, 1642; III. Fluid-liquid chromatography, 1642; IV. Fluid-solid chromatography, 1642.
- Sieczka, P. M. See Golike, R. C., 2828.
- Siegfried, B., Pater, B. K., and Béguin, E. Nitric acid reaction for assessment of quality of almond oil, 3239.
- Sierra, F., and Sánchez-Pedreño, C. Determination of the persulphate anion with the mercurous ion as reductimetric reagent in the presence of photo-sensitisers, 1845.
- Siest, G. Colorimetric determination of urinary urea with nioxime, 851.
- and Panek, E. Colour and fluorescence reactions of biological urea derivatives with  $\alpha$ -diketones, 2065.
- See also Vigneron, C., 853.
- Sievers, R. E. See Ross, W. D., 1787.
- Siggaard-Andersen, O., and Oliver, D. Ultra-micro cells for routine laboratory adaptation for the Gilford 300 spectrophotometer, 3330.
- Sikorska-Tomicka, H. Thiolactams as reagents in quantitative analysis. II. Colorimetric determination of bismuth, 633.
- Silavea, E. V. See Barbash, T. L., 1271, and Stepin, V. V., 1258.
- Silah, J. See Nowaczynski, W., 843.
- Silberstein, K., and Krüger, E. Gas-chromatographic investigation of hop oils. II. Hop oils in wort, 966.
- Siling, M. I. See Adorova, I. V., 2577, and Kovner, V. Ya., 2580.
- Sillen, L. G. See Ingri, N., 531.
- Silvela, S. L. See Alexander, D. E., 397, and Collins, F. I., 1548.
- Silverman, P. See Rinderknecht, H., 2123, 2674.
- Silvestri, S. Control of some pharmaceutical products. IV. Separation and determination of azapetine phosphate, 3225; V. Determination of ajmalicine, 3202.
- and Taponeco, G. Gas-chromatographic determination of azapetine and phenoxybenzamine in pharmaceutical preparations, 1096.
- Sil'vestrova, L. S. See Kalinovskaya, E. A., 1949.
- Simal Lozano, J., Charro Arias, A., and Fierro Fierro, C. Electrophoresis of the proteins of cow's milk serum, 1543.
- Simmonds, P. G., Fenimore, D. C., Pettitt, B. C., Lovelock, J. E., and Zlatkis, A. Design of a nickel-63 electron-absorption detector and analytical significance of high-temperature operation, 445.
- Simmons, J. H. See Holmes, D. C., 404.



- Simmons, N. A. Automated serum bilirubin determination, 2656.
- Simon, R. K., Christian, G. D., and Purdy, W. C. Coulometric determination of arsenic in urine, 3131.
- Simon, Wilhelm. See Clerc, J. T., 488, and Štefanac, Z., 560.
- Simon, William, Castelli, W. P., and Rutstein, D. D. Semi-automated remote GLC analysis, 1074.
- Simonaitis, R. A., and Gubernator, G. C., III. GLC of acid chlorides, 226.
- Simonoff, G. See Lagarde, M., 638.
- Simonov, V. D., Akhunov, T. F., Alyamkin, Yu. N., and Lushchekina, L. I. Determination of chlorination products of phenol in the production of 2,4-dichlorophenol, 1347.
- Simpson, D. Automated determination of serum organic iodine, 293.
- See also Broughton, P. M. G., 2585.
- Simpson, N. I. M. See Kumar, S., 1041.
- Sims, R. J. See Fioriti, J. A., 3145.
- Simson, B. W., and Timell, T. E. Determination of the carbohydrate composition of microgram quantities of plant tissues, 1378.
- Simson, T. F. See Bazhov, A. S., 564.
- Sinclair, M. J., Hart, R. A., Pope, H. M., and Campbell, E. J. M. Use of the Henderson-Hasselbalch equation in routine medical practice, 1991.
- Sindram, E. D. A. See Weber, A. P., 890.
- Singh, E. J., and Gershbein, L. L. Phospholipids of human hair lipids, 837.
- Singh, J., and Lanthier, J. D. Determination of chlorinated pesticide residues in animal and vegetable oils, 2196.
- Singh, R. P. See Goel, D. P., 172.
- Singhal, G. K., and Tandon, K. N. Studies on metallochromic indicators. II. Zincon and its mercury and zinc complexes as indicators in EDTA titrations, 538.
- Singhal, K. C. See Sinha, R. C. P., 2209.
- Sinha, A. See Mitra, G. D., 1945.
- Sinha, A. K., and Venkatachalam, K. A. Fluorescent indicators for hydrocarbon-type analysis by chromatography, 2550.
- Sinha, R. C. P., Singhal, K. C., and Banerjee, B. K. Simultaneous spectrographic determination of some minor and trace elements in fertiliser raw materials. II. Gypsums, 2209.
- Sinha, S. N., and Gabrieli, E. R. Simultaneous determination of benzoic and hippuric acids in biological fluids, 2618.
- Sinit'syn, N. M., Rovinskii, F. Ya., and Ispravnikova, V. V. Extraction of nitrosopentahalourathene complexes with quaternary ammonium bases, 170.
- Sinsheimer, J. E., and Smith, R. V. Analysis of hydroxystilbenes, 242.
- Sironi, G., Litigio, G., and Amati, G. Determination of sulphur in blast-furnace gas, 116.
- Sivaramaiah, G., and Krishnan, V. R. Controlled-potential coulometric estimation of *o*-phenylenediamine, 1348.
- Sivori, E., and Guerrero, A. H. Direct determination of bismuth with Rhodamine B, 1212.
- Skála, O., Urválková, D., and Kutil, J. Adaptation of the ion source in mass-spectrometric analysis of gallium arsenide by using a vacuum high-frequency spark, 1671.
- Šalická, B. Determination of sulphur-containing compounds in urine after the administration of disulfiram, 817.
- Sammelsrud, K. S. See Prydz, S., 2875.
- Škarvada, A., and Zbytek, P. GLC determination of unsaturated hydrocarbons in pyrolysis gas, 3090.
- Skinner, J. M., and Docherty, A. C. Determination of potassium in fertilisers by an automated u.v. absorptiometric method, 2208.
- Skinner, W. A., Leafner, M. A., and Parkhurst, R. M. Investigation of the use of derivative neutron-activation analysis for drug assay, 2677.
- Skipski, V. P., Good, J. J., Barclay, M., and Reggio, R. B. Quantitative analysis of simple lipid classes by TLC, 2042.
- Sklyarenko, Yu. S. See Pavlenko, L. I., 1176.
- Skogerboe, R. K., Gravatt, A. S., and Morrison, G. H. Flame-spectrophotometric determination of phosphorus, 288.
- Todd, R., and Morrison, G. H. Absorption-emission intensity ratio measurements in flame spectrophotometry, 2296.
- Skóra-Ziętek, M., and Fidelus, J. Determination of warfarin in blood, serum and plasma, 3138.
- Skornyakova, L. V. See Podchainova, V. N., 2204.
- Skórzyńska, K. Indirect polarographic determination of 2-(2-benzylphenoxy)triethylamine hydrochloride, 935.
- Skrpniuk, N. A. See Shevchuk, I. A., 663.
- Skurikhin, I. M., and Efimov, B. N. Chromatographic separation of monomeric products of the ethanolysis of lignin of oak and pine, 266.
- Determination and methods for identification of certain monomeric products of ethanolysis of lignin, 3103.
- Slater, D. N. See Aspinall, A., 2492.
- Slávik, I., Pašteka, M., and Kučerová, M. Detection and determination of acetyl groups in wood and cellulose pulp, 1965.
- Slavin, M. See Sulitzeanu, D., 458.
- Slickers, K. See Höller, P., 665.
- Šliwioł, J. See Duk, B., 3167.
- Smachnaya, V. F. See Afanas'ev, S. K., 2974.
- Smart, N. A. Determination of azinphos-methyl residues in crops, 1590.
- and Hill, A. R. C. Chromatographic identification of some polar organophosphorus insecticides and their residues with use of formamide-impregnated paper and thin-layer systems, 961.
- Smathers, J. B., Duffey, D., and Lakshmanan, S. Study of chromatographic papers for nuclides likely to interfere in activation analysis, 1704.
- Smirnova, E. V. See Krinberg, I. A., 2821.
- Smith, A. J., Cooper, F. F., jun., Rice, J. O., and Shaner, W. C., jun. Determination of trace amounts of total nitrogen in petroleum distillates, 3093.
- Smith, C. D., and Wise, J. K. Infra-red spectrometric examination of paper. I. Techniques and fibre composition, 1380.
- Smith, C. G. Separation and identification of polycyclic aromatic hydrocarbons in rubber dust, 3119.
- Smith, D. See Grotelueschen, R. D., 988.
- Smith, D. H. See Burlingame, A. L., 2312.
- Smith, E., Levine, J., and Baines, D. Partition chromatographic assay of opium and opium preparations, 1.
- Smith, F. A. See Ribbons, D. W., 2823.
- Smith, G. F. See Murray, M., 2645.
- Smith, H. See Bogan, J., 2603.
- Smith, J. C. See Hackley, B. M., 1997.
- Smith, J. F. See Evans, M. B., 1062.
- Smith, J. N. See Marymont, J. H., 3159.
- Smith, M. J. See Firsching, F. H., 1799.

- Smith, P. J., and Hermann, T. S. Separation and identification of benzothiadiazines in commercial diuretic formulations by TLC and i.r. spectrophotometry, 2157.
- Smith, P. R. See Pilkington, E. S., 650.
- Smith, R. C. See Kellum, G. E., 1341.
- Smith, R. D. See Beckman, H. F., 1557.
- Smith, R. H. See Schmitt, R. A., 182.
- Smith, R. S., and Wilson, W. Improved conductimetric measurement of carbon dioxide, 1027.
- Smith, R. V. See Sinsheimer, J. E., 242.
- Smith, S., Watts, R., and Dils, R. Quantitative GLC of rodent-milk triglycerides, 2622.
- Smith, S. J. See Beckstead, H. D., 1053.
- Smithuis, L. O. M. J., and Becker, L. J. Oxidimetric determination of amidopyrine with potentiometric or biamperometric determination of end-point, 357.
- Snelson, F. See Primavesi, G. R., 1056.
- Snetsinger, K. G., and Keil, K. Micro-spectrochemical analysis of minerals with the laser micro-probe, 1290.
- Snoek, O. I., and Gouverneur, P. Simple photoelectric carbon dioxide titrator, 1187.
- See also Gouverneur, P., 1364.
- Snyder, L. R. See Kwok, J., 2253.
- Snyman, G. C. Assay of high-purity gold by means of radio-isotope X-ray fluorimetry, 573.
- So, S. S., and Potts, H. R. Computer programs for quantitative and semi-quantitative analysis with an electron micro-probe analyser, 2289.
- Sobczewska, M. See Borkowski, B., 3194.
- Sobczynska, J. See Basińska, H., 81.
- Sobolev, A. S., and Kaluzhskaya, I. N. Analysis of chlorination products of benzene by GLC, 1343.
- Soczewinski, E., and Manko, R. Some problems of reproducibility of  $R_F$  values in liquid-liquid partition chromatography, 2.
- and Matysik, G. Two types of  $R_M$ -composition relationships in liquid-liquid partition chromatography, 3295.
- and Rojowska, M. Liquid-liquid ion-exchange system for the separation of amino-acids, 2644.
- Urban, T., and Wolski, T. Spectrophotometric determination of nitrite, 626.
- Sogani, N. C. See Bhandari, M. R., 2881.
- Soják, L., and Golis, E. Gas-chromatographic analysis of mixtures of solvents used for de-waxing petroleum fractions, 764.
- Sokolov, A. G., Elyashberg, M. E., and Koldobskii, R. B. Near-infra-red spectrophotometric determination of water in benzene solutions of *m*-disopropylbenzene dihydroperoxide, 2510.
- Sokolova, S. I. See Bogatyrev, V. L., 594.
- Sokolowska, I. See Lewandowska, I., 2681.
- Sokovikova, N. K. See Shakhova, Z. F., 1828.
- Solbach, H. G. See Remmers, V., 3150.
- Soldi, T. F. See Fulle Soldi, T.
- Soljić, Z., and Marjanović-Krajočan, V. Determination of silica, ferric oxide, alumina, titania, lime and magnesia in bauxite: analysis of limestone and dolomite, 3042.
- See also Turina, S., 2786.
- Solodovnik, S. M., Goryushina, V. G., Brodskaya, V. D., Nazarova, M. G., and Lushina, V. K. Spectrographic determination, after chemical concentration, of the impurities in semiconductor arsenic, 1838.
- Soloimskaya, E. A. Determination of histaminase activity, 339.
- Solomatina, L. S. See Alekseeva, K. V., 762.
- Solomko, V. Ya. See Evstratova, K. I., 2522.
- Solomon, P. Analysis of gas mixtures by gas chromatography, 554.
- Soltovets, G. N., and Kul'nevich, V. G. Determination of furfuryl alcohol in mixtures with 2-furaldehyde, 3088.
- Solunina, I. A. See Mikhno, S. D., 3067.
- Someno, K. See Yamamoto, O., 1734.
- Sommer, J.-M. See Deluzarche, A., 979.
- Sommer, L., and Kubáň, V. Hydroxytriphenylmethane dyes as spectrophotometric reagents, for beryllium, 1786.
- See also Havel, J., 2934.
- Sommers, A. L. See Drushel, H. V., 1361.
- Somorjai, Z. See Krasznai, I., 1521.
- Sonders, R. C., Wiegand, R. G., and Netwal, J. C. Determination of excretion of cyclamate in the rat, 2187.
- Songina, O. A., Kemeleva, N. G., and Pikhovnikova, A. K. Indirect amperometric determination of praseodymium dioxide, 1806.
- Ospanov, Kh. K., Rozhdestvenskaya, Z. B., and Gutermaier, T. K. Amperometric titration of silver and palladium with sodium 2,3-dimercapto propane-1-sulphonate solution, 2360.
- See also Ospanov, Kh. K., 2356.
- Sonley, J. M. See Hill, R. L., 1951.
- Sonnatg, F. Universal pre-column reactor system for the pyrolysis and gas chromatography of polymers, 2789.
- Sontea, S., and Constantin, V. Spectral analysis of aluminium bronze and tin bronze, 2887.
- Sorantin, H. See Höfler, H., 687, and Patek, P., 432.
- Sosnowski, J. See Osinski, T., 852.
- Sotobayashi, H., Lie, S. L., Springer, J., and Ueberreiter, K. Gel-permeation chromatography separation of oligomeric model compounds prepared from diphenyl carbonate and 4,4'-isopropylidenediphenol, 2570.
- Sotos, J. F. See Addanki, S., 792.
- Souchay, P. Polarographic determination of inorganic constituents in foodstuffs, 367.
- Soumalainen, H. See Ronkainen, P., 972.
- Sourkes, T. L. See Wong, K. P., 1478.
- Soušek, O. See Homolka, J., 346.
- Spáček, P. See Kubín, M., 1626.
- Spach, C., and Spach, G. Graphical representation of scope of determinations of chlorine, 2598.
- Spach, G. See Spach, C., 2598.
- Spall, W. D. See Vanderborgh, N. E., 1721.
- Spano, P. F., Devoto, G., and Gessa, G. L. Determination of catecholamines, 2067.
- Späth, M. See Classen, H. G., 3126.
- Speckman, R. A., and Collins, E. B. Separation of biacetyl, 3-hydroxybutan-2-one and butane-2,3-diol by salting-out chromatography, 2038.
- Speeek, A. See Cornelis, R., 2409.
- Spell, W. H., and Iddings, F. A. Beam centring in a neutron generator, 3359.
- Spencer, N. Ion-exchange chromatography of polyhydric compounds, 304.
- Speranskaya, E. F. See Kulev, I. I., 3006.
- Spichale, W. See Alter, J., 1587, and Efer, J., 2458.
- Spies, J. R. Determination of tryptophan in proteins, 323.
- Spillett, R. E. See Appleby, A., 135.
- Spini, G. See Bertoglio Riolo, C., 1756.
- Spitz, H. D., and Goudie, A. J. Determination of antimony in talc, 1960.
- Spitzer, H., and Tesik, G. Atomic-absorption determination of silver and gold in pyrite 'cinders' and similar products, 152.
- Spitz, H. See Illaszewicz, A., 2332.
- Spratt, J. L. See Harbison, R. D., 334.
- Sprecher, M. See Trop, M., 2519.
- Springer, J. See Sotobayashi, H., 2570.



- burný, J., and Jakoubek, B. Densitometric determination of proteins in small volumes, 878.  
 burný, K. See Československá Akademie Věd, 1621.  
 rinivasan, N. V. Determination of titanium in aluminium-nickel-cobalt alloys and in ferrotitanium, 1198.  
 rinivasan, V. S., and Kuwana, T. Measurement of optical rotation by an absorption method, 1681.  
 rivastava, K. C. See Tiwari, R. D., 223.  
 rivastava, S. N. See Lal, S., 2443.  
 rivastava, V. N. P., and Saxena, O. C. Titrimetric micro-determination of glycols, 1318.  
 rouji, G. See Loiselet, J., 2670.  
 rp, L. See Chromý, V., 702.  
 taats, P. A., and Morgan, H. W. Activated uranium as a getter for rare-gas lasers, 1652.  
 tadler, I. See Oberländer, H.-E., 2738.  
 tagg, B. H., and Whyley, G. A. Quantitative estimation of tissue lactate dehydrogenase isoenzymes on cellulose acetate, 2109.  
 tahl, E. Standardisation of procedures and terminology of TLC, 2. Analytical and preparative TLC, 3. Standardisation of terminology in TLC, 2779.  
 — and Jork, H. TLC of opium alkaloids, 2780.  
 — and Schorn, P. J. Characterisation of pharmacopoeial drugs by TLC. I. General basis and a proposal for a monograph on belladonna herb, 352.  
 — See also Fresenius, W., 2780.  
 tahl, Z. See Foa, E., 608.  
 taib, W. See Remmers, V., 3150.  
 tajner, A., Silva, J., and Musil, F. Spectrophotometric determination of orotic acid in blood serum, 3140.  
 takheev, Yu. I. See Vul'ison, E. K., 3370.  
 talder, K. See Stegemann, H., 870.  
 talling, D. L. See Gehrke, C. W., 2101.  
 tambaugh, J. E., and Manthei, R. W. Characterisation of substituted nitroimidazoles on paper and thin-layer chromatograms by colorimetric reactions, 754.  
 tamberg, J. Current trends in ion-exchange resins and similar gel systems, 3314.  
 — See also Ševčík, S., 2773.  
 tamcarbon N.V. Process for determining the concentration of a substance in a liquid, 1895.  
 tamm, O. A. See Ramanathan, S., 3102.  
 tanchev, P. Polarographic determination of selenium as selenosulphate in copper concentrates, 1777. Study of complexes with hydroxylamine. II. Polarographic behaviour and determination of lead, 2417.  
 tankova, O. See Dokládlová, J., 1925.  
 tankoviansky, S., Čárský, J., Beňo, A., and Dolníková, E. Gravimetric determination of cadmium with  $\beta$ -resorcyaldehyde thiosemicarbazone, 2379.  
 tanley, C. W. See Post, A. P., 958.  
 tanton, M. G. Colorimetric determination of inorganic phosphate in the presence of biological material and adenosine triphosphate, 2004.  
 tarchik, L. P. See Plaksin, I. N., 2813.  
 tarošek, E., and Webs, K. Polarographic behaviour of indium in nitrilotriacetic acid media, 592.  
 tarr, R. I., and Johnsen, R. E. Cleaning electron-capture detectors of the concentric-tube design, 446.  
 tarshov, I. M., and Rayanov, F. Z. GLC of nitroparaffins, 1332.  
 tary, J., and Kratzer, K. Determination of extraction constants of metal diethyldithiocarbamates, 1761.  
 Stashkova, N. V., Feofanova, V. V., and Kurbatova, V. I. Determination of tungsten in niobium and tantalum by a.c. polarography, 1221.  
 — Suslova, S. P., and Kurbatova, V. I. Absorptiometric determination of molybdenum in niobium or tantalum with 8-mercaptopquinoline, 1220.  
 — See also Malkina, T. G., 1161, and Štepin, V. V., 2994.  
 Staude, H. See Schmidt, Klaus, 2876.  
 Stedronsky, E. R. See Gal, J., 1912.  
 Štefanac, Z., and Simon, W. Highly selective sodium-ion-responsive glass electrode, 560.  
 — and Verbič, A. Determination of sulphoxides by potentiometric titration and i.r. spectrophotometry, 210.  
 Štefani, R. See Cornu, A., 2309.  
 Štefanov, K. See Popov, A., 982.  
 Štefanovich, V. Thin-layer electrophoresis of carbohydrates, 1320.  
 — and Gore, I. Micro-determination of acid mucopolysaccharides in vascular tissue, 1428.  
 Štefanski, R. J., Adair, R. K., Kasha, H., and Larsen, R. C. Large-area time-of-flight counter system, 1676.  
 Stefkín, F. S. Separation of molybdenum from iron on ionites in nitric acid-sulphuric acid medium, 3003.  
 Stegemann, H., and Stalder, K. Determination of hydroxyproline, 870.  
 Steger, E. See Petschik, H., 1339.  
 Stehl, R. H., Margerum, D. W., and Latterell, J. J. Determination of traces of metals by using coordination chain reactions with masking agents and with automated rate measurement, 17.  
 — See also Margerum, D. W., 414.  
 Stehlik, G. See Scherz, H., 2850.  
 Stein, C. Determination of 4-(4-chloro-6-sulphom-tolylazo)-1-naphthol (in D & C Red No. 8 and No. 9), 262. Determination of anthraquinone intermediates (in D & C Violet No. 2), 1376.  
 Steingraber, O. J. See Berلمان, I. B., 2285.  
 Steinhäuser, O., Fragstein, P. von, and Harzdorf, C. Analysis of fluorspar, 686.  
 — See also Harzdorf, C., 2453.  
 Steiniger, H. See Stutter, E., 3207.  
 Steinke, I. Photometric determination of vanadium in petroleum fractions, 1365.  
 Steinnes, E. See Brunfelt, A. O., 1174, Holm, V., 3198, and Johansen, O., 3012.  
 Stejskal, Z. See Mareš, V., 1490.  
 Stenroos, L. See Mahadevan, V., 224.  
 Štěpán, J. See Hyníe, I., 1407, and Večerek, B., 2806.  
 Stephen, W. I., and Uden, P. C. Quinoxalines as analytical reagents. I. Derivatives containing the copper<sup>I</sup>-specific grouping, 568.  
 — See also Martin, J. M., 641, 1229, and Salam Khan, M. A., 1740.  
 Stephens, B. G., and Suddeth, H. A. Extraction of the 1,10-phenanthroline, 4,7-diphenyl-1,10-phenanthroline and 2,4,6-tripyridyl-1,3,5-triazine complexes of iron<sup>II</sup> into propylene carbonate: application to the determination of iron in seawater and aluminium alloys, 144.  
 Stephenson, J. Calibration rig for gamma-radiation dose-rate meters, 510.  
 Štepin, V. V., Barbash, T. L., Silaeva, E. V., Rakhmatulina, L. G., and Morozova, O. V. Determination of iron, cobalt, copper, zinc and lead in manganese ores, ferromanganese and manganese metal after separation by ion-exchange chromatography, 1258.



- Stepin, V. V., Ponosov, V. I., Novikova, E. V., Shashkova, N. V., Sushkova, S. G., Murashova, V. I., and Emasheva, G. N. Determination of selenium and tellurium sulphide ore by using ion-exchange chromatography, 2994.  
— See also Kamaeva, L. V., 3030, and Verbitskaya, V. A., 1834.
- Stepinac, M., and Karšulin, M. The pH function of glasses containing the oxides of lithium, barium, praseodymium, neodymium and silicon, 1687.
- Stern, D. J., Lee, A., McFadden, W. H., and Stevens, K. L. Volatile constituents of grapes: identification of volatiles from Concord essence, 950.
- Stern, J. S., Franklin, M. J., and Mayer J., Separation of adrenaline and noradrenaline on glass-fibre paper, 856.
- Sternberg, J. C. See Kadish, A. H., 2614, and Kwok, J., 2253.
- Sternhell, S. See Brophy, G. C., 2829.
- Sternkopf, G. Determination of tryptophan in leguminous seeds, 2080.
- Stevens, H. M. General screening for drugs in post-mortem viscera, 294.
- Stevens, K. L. See Stern, D. J., 950.
- Stevens, R. K. Determination, by GLC, of organophosphate pesticides in cold-pressed citrus oils, 1560.
- Stevenson, C. E. See Comer, J. P., 2142.
- Stevenson, R. See Hobart, E. W., 40.
- Stewart, A. F. See Harris, Melvyn J., 3201.
- Stewart, J. H., jun., Barton, T. H., jun., and Ferguson, M. R. Complete analysis of uranium-niobium-zirconium alloy by X-ray absorption-edge technique, 1811.
- Stewart, M. F. See Dallas, M. S. J., 219.
- Stewart, P. L., and Tipton, I. H. Shearing and crushing device for mixing powders, 2769.
- Sthanunathan, S. See Bhattacharyya, B. N., 2430.
- Sthapak, J. K. See Mishra, D. D., 2859.
- Stiefvater, O. L. See Volpicelli, R. J., 2242.
- Stigbrand, T. Extinction coefficient of cyanomethaemoglobin, 888.
- Stillwell, R. N. See McCloskey, J. A., 2310.
- Stockton, J. W. See Armistead, C. G., 479.
- Stoddart, R. W., and Northcote, D. H. Separation and measurement of microgram amounts of radioactive polysaccharides in metabolic experiments, 307.
- Stoelhorst, J. See Schurer, K., 463.
- Stoffer, J. See Rigby, F. L., 967.
- Stokely, J. R., and Shults, W. D. Coulometric determination of americium, 87.
- Stoll, M. See Flament, I., 1564.
- Stoll, S. See Prat, Y., 3248.
- Stoll, U. Determination of sorbitol in apples and pears, 377.
- Stoloff, L., Beckwith, A. C., and Cushmac, M. E. TLC spotting solvent for aflatoxins, 2036.  
— See also Eppley, R. M., 2181.
- Stolyarov, K. P., and Amantova, I. A. Spectrophotometric investigation of ascorbic acid complexes of metals, 543.
- Stone, L. R. Determination of arsenic in blood or bile by using a dry ashing procedure, 1410.
- Stonehart, P. Adsorption and diffusional parameters for analysis of carbon monoxide in aqueous solutions, 611.
- Stoner, G. A., and Evans, J. W. Enzymic determination of 2-oxoglutaric acid, 830.
- Storry, J. E., and Tuckley, B. TLC of plasma lipids by single development, 832.
- Stots, Z. See Hrivnák, J., 2220.
- Stottmeister, U. See Holzapfel, H., 707, 3075.
- Stotzky, G. See Juo, P.-S., 300.
- Strain, H. E. See Sherma, J., 2090.
- Strain, J. E. See Dyer, F. F., 1707.
- Stránský, Z. See Stůžka, V., 1105.
- Stratton, L. P., and Frieden, I. Autoradiographic detection of reactive protein mercapto-groups. Application to anuran haemoglobin chains, 2096.
- Štrauchová, O. See Vondráčková, J., 3210.
- Strauss, H. Spectrophotometric determination with formaldoxime, of manganese in bright active reinforcing fillers for rubber, 788.
- Strebulaeva, E. N. See Fedorov, A. A., 1239.
- Street, H. V. Forensic problems in the gas chromatography of amines and alkaloids, 1096.
- Streeter, C. L., and Fishbein, W. N. Chlorination-heat detection of hydroxamic acids and amides on paper chromatograms, 2523.
- Streeto, J. M., and Reddy, W. J. Assay for adenylyl cyclase, 1484.
- Strelow, F. W. E. Application of ion-exchange chromatography to accurate determination of lead, uranium and thorium in tantaloniobates, 112.  
— Coetzee, J. H. J., and Van Zyl, C. R. Separation of alkali metals from alkaline-earth and other elements by cation-exchange chromatography in nitric acid, 1772.  
— Van Zyl, C. R., and Nolte, C. R. Separation of alkaline-earth elements by cation-exchange chromatography in ammonium malonate media, 1784.
- Strel'tsova, S. A., and Radzhabova, M. M. Difference spectrophotometric determination of tungsten in ores, 3007.
- Strickland, R. D. See Fooks, J. R., 2689.
- Strohal, P. See Picer, M., 1999.
- Ströhl, G. W. Determination of traces of BHC in surface water, 2230.
- Strojek, J. W. See Kemula, W., 501.
- Stromberg, H. See Samuelson, O., 3.
- Strong, A. A. See Crider, W. L., 1592.
- Strong, A. B., Rehnberg, G. L., and Moss, U. R. Determination of strontium in environmental media, 2166.
- Stross, F. H. See Johnson, H. W., jun., 2778.
- Strother, A. GLC of various phenyl *N*-methylcarbamates, 2524.
- Strübing, B. See Berge, H., 3342.
- Struhár, M., and Nguyen Thi Ban. Determination of purine alkaloids in liquid cola extract, 1502.
- Strukova, M. P., Kashiricheva, I. I., and Lapshova, A. A. Determination of palladium and chlorine in organopalladium complexes, 1906.  
— and Kotova, V. N. Determination of phosphorus and iron in organometallic compounds, 2499.
- Strycharska, M. See Klewska, A., 798.
- Stryk, F. G. von. Determination of dicloran and its metabolites by TLC, 1583.
- Stubbins, M. I. See Watson, J. E., 1404.
- Stubbs, M. F. Modification of toluene-3,4-dithiol tests for the field determination of molybdenum, 1856.
- Stuchlik, M., Krasnec, L', and Csiba, I. Use of solubilising agents in paper partition-chromatography. III. Separation of polycyclic aromatic hydrocarbons by solubilisers in the mobile phase, 751.
- Studennikov, Yu. A., Belova, R. A., and Losev, N. F. X-ray spectrographic determination of molybdenum in molybdenum-concentrate pulp, 1240.
- Studenskaya, L. S. See Kharkover, M. Z., 1143.
- Kruglova, M. N., 1165, and Vorozhbitskaya, K. F., 1125.

- tuder, P., and Haefelfinger, P. TLC determination of meso-inositol on ready-for-use plates, 2.
- tudier, M. H. See Haumann, J. R., 2836.
- tušov, B. A. Standard-background X-ray fluorescence spectrographic analysis of pulps, 1146.
- turn, F. von. See Bersier, P., 113.
- turn, W., and Hansen, E. Hydrogen cyanide in *Prunus* seeds and other foodstuffs. II. Hydrogen cyanide content of raw and processed bitter almonds: toxicological and forensic considerations, 2184.
- tutter, E., Steiniger, H., and Bradler, G. Determination of inhibitory zone diameters in antibiotic testing with the aid of the Zeiss Dokumator reading equipment, 3207.
- tutz, M. H., Ludemann, W. D., and Sass, S. Improved preparative layer chromatography, 2258.
- tužka, V., and Stránský, Z. Oxazines as acid-base indicators. IV. Spectrophotometric investigation of derivatives of Meldola blue and Muscarin, 1105.
- tušoni, J. C. Determination of trace aromatics in paraffins, 255.
- ubbotin, A. I. See Balandina, L. A., 2503.
- ubbotina, A. I., Ivanova, É. V., and Domrachev, G. A. Separation of lanthanide- $\beta$ -diketone complexes by TLC, 2401.
- ubbotina, T. Š. See Patsuk, V. V., 1232.
- uda, K. See Hamaguchi, H., 1170.
- uddeth, H. A. See Stephens, B. G., 144.
- udds, W. See Boon, P. F. G., 1520.
- udhalatha, K. K. See Desai, S. R., 799, 2917.
- udmeier, J. L. See Swain, J. L., 2342.
- ugahara, K. See Hayashi, S., 1385.
- ugikawa, S. See Emura, S., 1606.
- ukhareva, Z. I. See Zhtantalai, B. P., 1933.
- ulin, V. V. See Niewodniczański, J., 2374.
- ulitzeanu, D., Slavin, M., and Yecheskeli, E. Preparative disc electrophoresis. II. Further improvements in apparatus and details of performance, 458.
- ullivan, D. See Schwartzman, G., 195.
- umi, K. See Tsuchiya, Y., 1109.
- Summers, R. M., and Mefferd, R. B., jun. Preparation of very thin uniform cellulose thin-layer chromatographic plates, 433. Preparative TLC serum lipids, 3148.
- See also Mefferd, R. B., jun., 3165.
- Sundaresan, M. See Awasthi, S. P., 128.
- Sundeman, F. W., jun. See Savory, J., 2609.
- Surace, M. Use of an electron-capture detector in the clinical analysis for hormonal steroids, 1445.
- Surikova, E. I. See Kalinina, M. V., 3211.
- Surman, P. L. See Castle, J. E., 1766.
- Surmii, A. M., Arishkevich, A. M., and Usatenko, Yu. I. Amperometric determination of antimony and tellurium or selenium in semiconductor materials, 2869.
- uschny, O. See Aronoff, S., 1632.
- Sushanova, S. G., and Murashova, V. I. Reaction of selenium<sup>IV</sup> with diphenylcarbazide, 1,4-diphenylsemicarbazide and diphenylthiocarbazide, 1233.
- See also Murashova, V. I., 2996, and Stepin, V. V., 2994.
- Sushova, S. P. See Stashkova, N. V., 1220.
- Sussi, P. L. See Pittoni, A., 2784.
- Suter, H., and Jucker, H. Photo-electric recording of temperature-dependent processes, 1717.
- Sutherland, B. J., and Van Leeuwen, H. J. M. Estimation of lactose in cheese, 2176.
- Sutter, J. L. See Tishler, F., 2725.
- Sutton, R., and Harris, W. E. Pyrolysis - gas chromatography of hydrocarbons, 1913.
- Súva, J. See Stajner, A., 3140.
- Suwiński, J. See Troszkiewicz, C., 3089.
- Suzuki, K., Gotō, S., and Itō, Fuzio. Gas-chromatographic determination of chlorpropham in herbicide formulations, 992.
- Suzuki, M. See Ito, Mitsuo [Tokyo, Japan], 250.
- Suzuki, T. Effect of micro-structure of metals in emission spectroscopy, 1267.
- and Kambara, T. Effect of the counter-electrode material on the emission-spectrochemical determination of silicon and manganese in steel, 2475.
- Svechnikova, E. A. See Ustinova, V. I., 2999.
- Svensden, A. B. See Baerheim Svendsen, A.
- Svenska Ackumulator Aktiebolaget Jungner. Method and apparatus for coulometric analyses, 2846.
- Svobodová, D., and Gasparič, J. Colour reaction of phenols with 4-aminophenazone. I. Investigation of the properties of the dye product and the reaction conditions, 2533.
- Swain, W. R., and Feders, M. B. Fibrinogen assay, 883.
- Swain, J. L., and Sudmeier, J. L. Separation of anionic and cationic metal chelates by TLC, 2342.
- Swanberg, S. C. See Barak, A. J., 1457.
- Sweeney, C. C. See Vance, D. E., 836.
- Sweetman, L., and Nyhan, W. L. Sephadex G-10 adsorption chromatography of purines and related compounds occurring in biological fluids, 3182.
- Swensen, R. F., and Keyworth, D. A. Determination of water in hydrocarbons by gas chromatography, 1918.
- Swindells, N. Metallurgical applications of electron-probe micro-analysis: summary of discussion, 462.
- Swinehart, B. A. Gas-chromatographic determination of butane-2,3-diol in propane-1,2-diol with tetrakis(hydroxyethyl)ethylenediamine as stationary phase, 2512.
- Swinerton, J. W., and Linnenbom, V. J. Determination of C<sub>1</sub> to C<sub>4</sub> hydrocarbons in sea-water by GSC, 1018.
- Swisher, R. D. Bio-degradation for determination of linear alkylbenzenesulphonate benzene rings in activated sludge, 1605.
- Syamasundar, K. Amperometric determination of uranium with 2',3',4'-trihydroxychalcone, 1180. Amperometric determination of germanium with 2',3',4'-trihydroxychalcone, 1821.
- Syavtsillo, S. V. See Luskina, B. M., 1387.
- Syberg, A. See Dotreppe-Grisard, N., 1599.
- Sýkora, J., and Eybl, V. Paper chromatography of sodium salts of aminopolycarboxylic acids, 3236.
- Sytnewska, Z. See Kasiura, K., 3032.
- Syty, A., and Dean, J. A. Flame-emission spectrophotometric determination of molybdenum in steel, 1876.
- Szabó, M. See Zamfir, J., 2992.
- Szakács (née Pintér), M., and Maros, L. Analytical applications of the oxidation of organic compounds by bromine. II. Determination of phenetidine or phenacetin by means of *p*-benzoquinone and ammonia formed during the oxidation, 3085; III. Determination of 2-furaldehyde or furfuryl alcohol, 3087.
- Szalay, A. See Berényi, D., 3355.
- Szász, G. Determination of cholinesterase in serum with acetyl- or butyryl-thiocholine as substrate, 2672.
- Szczepaniak, S., Krzeczowska, I., and Nowicka, E. Separation of amino-acids in biological material by modified one-dimensional paper chromatography, 3163.



- Szczęśniak, M.** See Ramotowski, S., 1531.
- Szebenyi, I., and Répás, P.** Preparation of analytical standard pig-steel specimens, 664.
- See also Vajta, L., 759, 1948.
- Szende, G. L.** Investigation of aerosol dosages. I. Spectrophotometric determination of ethyl-papaverine, 2153.
- Szendrei, K.** Method of isolating porphyrone from opium, 2130.
- Szente, A., and Posternak, T.** Source of error in the detection of phosphorus-containing organic compounds by the method of Hanes and Isherwood, 1408.
- Szepesvary, E.** See Pungor, E., 2317.
- Szepsy, L.** See Bálint, T., 451.
- Sznelwar, R. B., and Moraes, E. de C. F.** Paper-chromatographic detection reagents for amino-acids and amines, 1452.
- Szotyori, K. S., and Jurics, E. W.** Paper-chromatographic determination of flavonoids in fruit juices, 951.
- Szyli, M.** Simplified two-dimensional electrophoresis, 2281.
- Szymanski, H. A., Antkowiak, J. J., and Bauman, L. A., jun.** Technique for increasing the solvent properties in proton magnetic resonance spectrometry, 2306.
- Szymborska, K.** See Czakow, J., 3320.
- T**
- Tachikawa, T.** See Kambara, T., 3315.
- Tadler, G.** See Katz, M. A., 1527.
- Taga, M.** See Hikime, S., 1880.
- Tagliavini, G., and Zanella, P.** Potentiometric acid-base titrations of organotin chlorides with tetraphenylarsonium chloride in acetonitrile media, 1935.
- Taguet, G.** Detectors for gas chromatography based on thermal absorption and desorption phenomena, 3.
- Tai, H.** See Huber, C. N., 2031.
- Takagi, T.** See Yamamoto, Yuroku, 175.
- Takahari, T.** See Kamori, O., 149.
- Takahashi, R.** See Senda, M., 1734.
- Takahashi, Y., Aoyama, I., Ito, Fumio, and Yamamura, Y.** Evaluation of phenyl acetate esterase activity as an index of liver damage, 343.
- Takahisa, M.** See Hattori, T., 1734.
- Takashima, K.** See Nakajima, T., 1734.
- Takashima, Y., and Ohashi, S.** Mössbauer spectra of natural minerals, 2485.
- Takata, Y.** See Mutô, G., 487.
- Takayasu, H.** See Kinoshita, K., 3151.
- Takei, S.** See Tôei, K., 1734.
- Takemura, S.** [Annual review, 1967]—Analysis of the chemical structure of nucleic acids, 1734.
- Takenouchi, H.** See Ueda, S., 1857.
- Takeuchi, T., Fujishima, I., and Yamada, M.** Spectrophotometric determination of micro amounts of sulphur in metals by combustion and reduction, 1227.
- and Sakurai, S. Emission-spectrometric determination by use of plasma-jet excitation, 161.
- Takizawa, K., Shimbashi, T., and Shiba, T.** Effect of tailing on the separability of mixtures in gas chromatography, 453.
- Talalaev, B. M.** See Ivanov, N. P., 470.
- Taliaferro, B.** See Weiss, P. J., 1507.
- Talipov, Sh. T.** See Kamaeva, G., 1142, Martirosov, A. E., 3031, Podgornova, V. S., 1169, 2915, and Sharipova, Sh. T., 3038.
- Talipova, L. L., Abramova, E. L., and Parpiev, N. A.** Absorptiometric determination of rhenium with 2-mercaptopbenzoic acid, 1259.
- Tallent, W. H., and Kleiman, R.** Use of bis-(trimethylsilyl)acetamide in the silylation of lipolysis products for GLC, 2629.
- Talwar, U. B., and Haldar, B. C.** Spectrophotometric determination of palladium<sup>II</sup> with acetophenone oxime, 683.
- Tambor, U.** See Rabitzsch, G., 921.
- Tammes, A. R.** See Nordschow, C. D., 2588.
- Tamura, H.** See Hozumi, K., 1643.
- Tamura, N.** See Motojima, K., 420, 1734.
- Tamura, Z.** See Imanari, T., 822, and Kawai, S., 315.
- Tanaka, Minoru.** See Shono, T., 1145.
- Tanaka, Motoharu, and Awata, N.** Catalytic determination of sub-microgram amounts of vanadium by means of the oxidative coupling of 4-hydroxyazobenzene-sulphonic acid with 1-naphthylamine, 1216.
- Funahashi, Shigenobu, and Shirai, K. Analysis of mixtures of heavy metals by means of differences in reaction rates of ligand-substitution reactions, 1127.
- See also Kawashima, T., 1850.
- Tanaka, R.** See Yamamoto, Yuroku, 1551.
- Tanaka, T.** See Nakajima, Y., 527.
- Tananaeva, A. N., and Shestakov, V. P.** Semi-quantitative spectrographic analysis of small samples of tin-plate, 1823.
- Tandon, J. P.** See Chawla, K. L., 634, Goyal, S. S., 1841, 3000, and Misra, G. J., 566, 642.
- Tandon, K. N.** See Dubey, P. S., 3069, and Singhal, G. K., 538.
- Tanikawa, K.** See Arakawa, K., 236.
- Tanner, J. T., and Ehmman, W. D.** Neutron activation determination of antimony in meteorites, tektites and rocks, 632.
- Tao, E.** See Yamamoto, Yuroku, 43.
- Tapia, P.** See Donoso, G., 93.
- Taponeco, G.** See Silvestri, S., 1096.
- Tappel, A. L.** See Beck, C., 909, and Caldwell, K. A., 3170.
- Tarasenko, T. I.** See Mikhailov, V. V., 739.
- Tarasevich, Yu. I.** See Ovcharenko, F. D., 430.
- Tarasov, A. I.** See Volodina, V. I., 3112.
- Tarayan, V. M., Arstamyan, Zh. M., and Mikaelyan, D. A.** Extraction-photometric determination of gold with methyl green, 2362.
- and Vartanyan, S. V. Extraction-photometric determination of rhenium with methylene green 2459.
- Tardon, S., and Balcárková, M.** Determination of calcium in coal by atomic-absorption spectrophotometry, 192.
- Tarrade, A. M.** See Truhaut, R., 2133.
- Tashkhodzhaev, A.** See Kamaeva, G., 1142.
- Taskaeva, T. P., and Vainshtein, E. E.** Atomic absorption determination of zinc and cadmium in mineral raw materials, 582.
- Tatarinskii, V. S.** See Alishoev, V. R., 2788.
- Tataru, E.** See Mohnke, M., 2349.
- Tatrai, O.** See Mühlemann, H., 2686.
- Tatsuno, T.** See Kaneko, K., 1164.
- Tatton, J. O'G.** See Holmes, D. C., 404.
- Täufel, A.** See Rutloff, H., 2121.
- Täufel, K.** See Rutloff, H., 2121.
- Taulli, T. A.** Chromogenic system for detection of organophosphonic acids in TLC, 1340.
- Taves, D. R.** Effect of silicone grease on diffusion of fluoride, 2006.
- Taylor, H. B.** See Associated Electrical Industries Ltd., 3092.



- Taylor, J. K. See Durst, R. A., 134, 503, and Marinenko, G., 104.
- Taylor, K. M. Fluorimetric determination of physostigmine in tissue samples and solutions, 810.
- See also Laverty, R., 2640.
- Taylor, L. See Otter, G. E., 973.
- Taylor, M. A., Baur, J. A., and Bricker, C. E. Gravimetric determination of hexa-amminecobalt<sup>III</sup> as the perchlorate, 2477.
- Taylor, P. M. See National Research Development Corporation, 2673.
- Teeter, R. M. Fluoroalcohol esters as derivatives for mass spectrometry, 1330.
- See also Gallegos, E. J., 1357.
- Tekinalp, B. See Güven, K. C., 3218.
- Telikkar, V. S. See Ramanarao, M. V., 743.
- Telling, G. M. See Chalmers, R. A., 1100.
- Temkina, V. Ya., Yaroshenko, G. F., and Lastovskii, R. P. Fluorescence pH indicators, 12.
- Temperli, M., and Sager, H. Comparison of two methods for testing the tendency of pharmaceutical glassware to yield alkali, 3190.
- Tendille, C. TLC of quinone compounds: plastoquinones and tocopheryl quinones, 3.
- Teodorescu, N., and Demetrescu, C. Complexometric determination of  $\alpha$ -benzamido-*o*-chlorocinnamic acid isonicotinohydrazide: application to determination of copper<sup>II</sup> ions, 246. Complexometric and gravimetric determinations of  $\alpha$ -benzamido-*p*-dimethylaminocinnamic acid isonicotinohydrazide, 362.
- Teodorovich, I. L. See Rumyantseva, L. S., 2968.
- Tepe, J. B. See Day, E. W., jun., 2191.
- Teranishi, K. See Hayashi, S., 1385.
- Teranishi, R. See Mon, T. R., 442.
- Terashima, K. See Tomioka, H., 107.
- Terent'ev, A. P., Bondarevskaya, E. A., and Kirillova, T. V. Analysis of organometallic compounds. II. Determination of alkoxy-groups, 2500.
- Rukhadze, E. G., Panova, G. V., and Viktorova, N. M. Optically active azomethines as reagents for determining metals, 1103.
- Volodina, M. A., and Fursova, É. G. Formation of nitrogen oxides during combustion of organic substances. I. Formation during the combustion in a flask filled with oxygen, 203.
- See also Potapov, V. M., 247.
- Terent'eva, E. A. See Cherkasskii, A. A., 4.
- Ter Heide, R. See Heide, R. ter.
- Terlain, B. L. See Jolles, G. R., 2607.
- Tesařik, B. Removable quartz cell for spectrochemical analysis in a well-defined atmosphere, 1657.
- Tesařik, K., Pošta, A., and Paleta, O. Separation of several isomeric chlorofluoroalkanes by gas chromatography, 3056.
- Tesik, G. See Spitzer, H., 152.
- Testemale, G., and Girault, J. Determination of caesium-137 in radioactive waste with use of sodium tetraphenylborate, 2232.
- Tetlow, J. A., Hall, G., and Fleming, A. J. Sampling programmer for use in automated chemical analysis, 2236.
- Tets, A. van, and Wiedemann, H.-G. Differential temperature curves for melting, supercooling and solidification processes, 1715.
- See also Wiedemann, H.-G., 1714.
- Tewari, S. G., Ghosh, P. C., and Bhatnagar, A. S. Closed-circuit technique for measurement of ratio of radon-222 to radon-220 in soil-gas, 2346.
- Tewari, S. N. Separation and identification of alkaloids by paper electrophoresis, and its application in medico-legal cases, 3193.
- Thackray, N. See Chapman, J. F., 1892.
- Thaler, H., and Gieger, U. Determination of total ascorbic acid in wine, 1095.
- Thede, L. See Samuelson, O., 721.
- Theil, G. B., and Auer, J. E. Comparison of absorption spectra for methaemoglobin prepared with sodium nitrite and with potassium ferricyanide, 880.
- Theimer, E. T. See Mitzner, B. M., 2544.
- Theisen, A. A., and Pinkerton, A. Volume-reduction technique for the X-ray spectrographic determination of micro-nutrient elements in plant tissues, 2599.
- Theodore, J. M. See Lange, W. E., 2017.
- Thi Ban, N. See Nguyen Thi Ban.
- Thiel, R. See Hetman, J. S., 2760.
- Thieleman, H. See Wullen, H., 2161.
- Thiemann, W. See Behne, D., 2279.
- Thieme, H. TLC separation of thymol and carvacrol, 1959.
- Thoai, N. V. See Nguyen Van Thoai.
- Thomas, H. H. See Schnetzler, C. C., 1175.
- Thomas, R. O. See Fawkes, J., 1635, Fishbein, L., 230, 749, and Zielinski, W. L., jun., 444.
- Thomas, V. See George, F. C. K., 1983.
- Thommesgay, C. See Munier, R. L., 866.
- Thompson, C. E. Spectrophotometric determination of the sum of platinum and palladium in geological materials, 191.
- Thompson, H. L., and Decker, W. J. Examination of blood for drugs by GLC, 2008.
- Thompson, J. S., and Shockman, G. D. Modified Park and Johnson reducing-sugar assay of insoluble materials: application to bacterial cell walls, 2611.
- Thompson, J. W. Identification of inks by electrophoresis, 275.
- Thompson, K. C. See Dagnall, R. M., 105, 1839, 2427.
- Thompson, R. N., and Heimer, J. T. Determination of dissolved oxygen in stream substrates, 2227.
- Thompson, S. See Fishbein, L., 819.
- Thompson, W. E. See Warren, R. J., 814, 1487.
- Thomson, J. See Askew, J., 2721, Mitchell, T. H., 2218, and Ruzicka, J. H. A., 1588.
- Thorburn, S. See Pease, E. C., 710.
- Thornburg, W. See Beckman, H. F., 1557.
- Thorndike, E. M., and Marion, A. P. Differential interference refractometer, 2313.
- Thun, H. See Ooghe, W., 602.
- Tibbling, G. See Schersten, B., 2027.
- Tichý, J. Modification to commercial densitometer for improved scanning of TLC plates, 3300.
- and Dencker, S. J. Separation of cholesteryl esters: comparison between paper and thin-layer chromatography, 2.
- Tikhomirov, I. A. See Tikhonov, G. S., 1133.
- Tikhonov, G. S., and Tikhomirov, I. A. Separation of lithium from sodium by two-dimensional electrochromatography in a 'slit-type column', 1133.
- Tikhonov, V. N. Study of complexes of bivalent metals with methylthymol blue, 31. Spectrophotometric determination of cerium and iron when present together, 604.
- Tikunova, N. I. See Patsuk, V. V., 1231.
- Timell, T. E. See Simson, B. W., 1378.
- Tims, G. A. See Hooper, B. J., 1496.
- Tinker, H. B. See Gross, D. E., 1930.
- Tinsley, I. J. See Lowry, R. R., 2260.
- Tipton, I. H. See Stewart, P. L., 2769.

- Tiptsova, V. G., and Kopnina, O. I.** Determination of traces of nickel in cadmium or zinc, 1789.
- Tischer, G.** Simultaneous GLC determination of water, tetrachloroethylene and trichloroethylene in refrigerating fluids, 766.
- Tishchenko, E. I.** See **Rud'ko, B. F.**, 1130.
- Tishchenko, M. A.** See **Poluëktov, N. S.**, 82.
- Tishler, F., Suter, J. L., Bathish, J. N., and Hagman, H. E.** Determination of sulphonamides in milk and tissues, 2725.
- Tishler, P. V., and Epstein, C. J.** Preparation of polyacrylamide gels for liquid-scintillation spectrometry, 2282.
- Tistchenko, S.** See **Commissariat à l'Énergie Atomique**, 2874.
- Tittensor, J. R., and Walker, R. T.** Isolation, analysis and chemical reactions of DNA. II. Base analysis of DNA, 896.
- Tiwari, R. D., and Srivastava, K. C.** Paper chromatography of fatty acids: use of the acetates of cobalt, copper and nickel and mercury<sup>1</sup> nitrate as spot-detecting reagents, 223.
- Tixier, R.** See **Philibert, J.**, 1097.
- Tobia, S. K., Gawargious, Y. A., and El-Shahat, M. F.** Spectrophotometric determination of copper by formation of molybdenum blue, 567. Qualitative analysis of alloys and determination of copper and iron by the ring-oven method, 1117.
- Todd, R.** See **Skogerboe, R. K.**, 2296.
- Toei, K., and Kobatake, T.** Successive complexometric titration of calcium and magnesium, 1006.
- **Yamamoto, Yuroku, Nakahara, K., Saito, M., Ueno, Keihei, Takei, S., and Miyamoto, M.** [Annual review, 1967]—Analytical reagents, 1734.
- Toerien, P. V. S.** See **Turkstra, J.**, 42.
- Tokuwame, M.** See **Ito, Mitsuo** [Sakai, Japan], 421.
- Tolar, V., Šantrůček, J., Němec, I., and Zýka, J.** Interaction of ferrocyanide with lead<sup>IV</sup>, 145.
- Tölgyessy, J., and Luckáč, P.** Activation analysis in forensic chemistry: review, 281.
- **Varga, Š., Jesenák, V., and Hroncová, D.** Radioactive 'kryptonates' in volumetric analysis. I. Use as complexometric indicators, 2328.
- See also **Konečný, J.**, 925.
- Tolmachev, V. N., Gol'tsberg, I. M., and Konkin, V. D.** Extraction with butanol of the complexes of titanium and zirconium with xylenol orange, 1199.
- Tománková, H.** TLC separation of derivatives of barbituric acid in drugs, 1513.
- Tomari, Y.** See **Watanabe, Y.**, 215.
- Tomashov, N. D., and Shreider, A. V.** Development of electrochemical methods of studying metallic corrosion: review, 4.
- Tomesányi, L.** See **Lovasi, J.**, 2383.
- Tomioka, H., and Terashima, K.** Extraction-spectrophotometric determination of bismuth with 4-(2-pyridylazo)resorcinol, 107.
- Tomisek, A. J., and Allan, P. W.** Water content of paper as a variable in paper chromatography, 2.
- and **Johnson, B. T.** Paper thickness as a factor in autoradiography of carbon-14, 2.
- Tomura, K.** See **Hamaguchi, H.**, 1170.
- Tonks, D. B.** Determination of cholesterol in serum: classification and review of methods, 2048.
- Tonooka, N.** See **Mori, Saburō**, 1263.
- Toothacker, W. S., Preuss, L. E., and Bugenis, C. K.** Debye-Scherrer powder diffraction using iron-55 K X-rays on lithium fluoride, 460.
- Toothill, C.** See **Broughton, P. M. G.**, 2585.
- Toren, E. C., jun., and Davis, J. E.** Analogue computer for solution of simultaneous equations occurring in analytical chemistry, 2851.
- Toren, E. C., jun., and Gnuse, M. K.** Differential kinetic determination of components of binary ketone mixtures, 3066.
- Toribara, T. Y., and Shields, C. P.** Determination of sub-microgram amounts of mercury in tissues, 3127.
- Toropova, V. F., and Anisimova, L. A.** Determination of 8-mercaptopurine by use of a catalytic hydrogen wave, 2546.
- Torraccia, E., Constantino, U., and Massucci, M. A.** Crystalline insoluble salts of polybasic metals. V. Ion-exchange properties of crystalline and amorphous zirconium arsenate, 27.
- See also **Alberti, G.**, 27.
- Torrance, A. M.** See **Harkness, R. A.**, 2266.
- Toryu, T.** See **Ozawa, L.**, 1800.
- Toseland, P. A.** Specific determination of lactose in plasma and urine, 2030.
- Tóth, G.** See **Vajta, L.**, 759.
- Tóth, L.** See **Pierr, W.**, 2188.
- Tóth, Z.** See **Krasznai, I.**, 1521.
- Touchstone, J. C.** See **Wallach, E. E.**, 847.
- Tourres, D. A.** Molecular structure and retention in GLC: influence of temperature on retention indices of alkane isomers, 709.
- See also **Loewenguth, J. C.**, 3.
- Tourte, J.** See **Mestres, R.**, 1561.
- Toussaint, A.** See **Barros e Vasconcelos, M. de**, 784.
- Townshend, A.** See **Mealor, D.**, 673.
- Trams, E. G.** TLC of hydroxamic acids, 725.
- Tranchant, J.** Theoretical study of separations by gas chromatography on porous polymers, 3.
- Trapitsyn, N. F.** Spectrographic determination of rare and rare-earth metals in a high-voltage a.c. arc, 2922.
- Travis, R. H.** See **Bravo, E. L.**, 1446.
- Trawinski, H.** Problems in determination of sizes of very fine particles, 3368.
- Treinen, M.** See **Rehboldt, R. E.**, 58.
- Tremasov, N. V.** See **Mochalov, K. N.**, 1261.
- Tremillon, B.** Use of chelation in applications of ion-exchange resins, 3.
- Treutler, E.** See **Gnauck, G.**, 1639.
- Trewavas, A.** Counting of labelled nucleic acids by liquid scintillation, 893.
- Triems, K., and Heinze, G.** Analysis of petroleum products. XI. Column chromatographic evaluation of petroleum, 2556.
- Trikha, K. C.** See **Goel, D. P.**, 172.
- Trivedi, S. R. C.** See **Prasad, S.**, 2355.
- Trop, M., Sprecher, M., and Pinsky, A.** Detection reagents for  $\alpha$ -hydroxy-acids,  $\alpha$ -oxo-acids and thiols in paper chromatography, 2519.
- Troszkiewicz, C., Suwiński, J., and Zieliński, W.** TLC separation of quinolines from isoquinolines, 3089.
- Truffert, L., Favert, M., and Le Gall, Y.** Determination of cadmium with Cadion 2B, 703.
- Truhaut, R., Schuster, G., and Tarrade, A. M.** Study of tomatine. IV. Gravimetric, colorimetric and microbiological determinations of tomatine, 2133.
- Truitt, D.** See **Robinson, J. W.**, 3327.
- Trujillo, A., and Frye, H.** TLC separation of the platinum metals, 168.
- Trukhacheva, V. A.** See **Malakhov, V. V.**, 2955.
- Trusell, F. C., and McKenzie, W. F.** Spectrophotometric determination of copper with 6,7-dimethyl-2,3-di-2-pyridylquinoxaline, 2882.
- Trushina, L. F.** See **Zakharov, M. S.**, 2336, 2426.
- Trutnovsky, H.** Automated gravimetric determination of carbon and hydrogen. II, 1897; III, 197. Cooling pincers for use in the micro-analytical laboratory, 3286.



- Iryonadt, A. See Zimmermann, Heinz, 273.  
 Imai, H.-T. See Oka, Y., 3039.  
 Ischan, D., and Leupin, K. Complexometric determination of pharmaceutical barbituric acids, 1512.  
 Ischersich, J., and Mauch, W. Enzymic - photometric determination of D-glucose and D-fructose in dietary sugar, 372.  
 Iselinski, Yu. K. Titrimetric determination of cupferron with zirconium oxychloride, 9.  
 — and Lapitskaya, E. V. Comparative study of metallochromic indicators for complexometric determination of zirconium, 2961.  
 Iskovnitskaya, I. A., and Bykhovtseva, T. T. Determination of uranium of different valencies in mixtures of oxides containing iron, 1182.  
 — and Epimakhov, V. N. Determination of selenium and germanium in semiconductor materials by oscillographic polarography, 2414.  
 Isubouchi, M. See Yamamoto, Yuroku, 52, 175, 244.  
 Isuchiya, Y., and Sumi, K. Determination of toxic thermal decomposition products of poly(vinyl chloride), 1109.  
 Isukahara, I. See Hattori, T., 1734.  
 Isukiyama, H., and Iwamoto, I. Casting and preparation of iron samples for X-ray fluorescence analysis, 1265.  
 Isunoda, T. Analyses of organic soiling extracted from naturally soiled cloths, 3105.  
 Isutsumi, M. See Omura, H., 342.  
 Isurbertini, O. Use of 1,4-bis-(5-tolyloxazol-2-yl)-benzene as a  $\beta$ -counting scintillator, 3354.  
 Isuckerman, M. M. See Kim, J.-S., 364.  
 Isuckley, B. See Storry, J. E., 832.  
 Isudorache, G. See Ionescu, T. D., 3316.  
 Isuesley, S. P., Sciarra, J. J., and Monte-Bovi, A. J. Development and evaluation of sampling device for the analysis of pharmaceutical aerosols, 3191.  
 Isulus, R., and Aydogan, Y. Spectrophotometric determinations with 4-dimethylaminocinnamaldehyde. II. Phenazone, 358; III. Meprobamate, 358.  
 Isulyupa, F. M., Barkalov, V. S., and Usatenko, Yu. I. The N-hexyl- and N-cyclopentyl-dithiocarbamates as reagents for the amperometric titration of selenium<sup>IV</sup> and tellurium<sup>IV</sup>, 122.  
 — Usatenko, Yu. I., and Pavlichenko, V. A. Spectrophotometric determination of cobalt in steel with the tripotassium salt of (dithiocarboxy)iminodiacetic acid, 1878.  
 Isumanov, A. A., and Efimychov, V. S. Possible analytical uses of 2-salicylideneaminophenol. III. Interaction with aluminium and gallium salts, 75.  
 Isurczan, J. W. GLC determination of sulphapyrimidines in tablets, 2155.  
 — and Kram, T. C. NMR determination of meprobamate in tablets, 2148.  
 Isurina, S., and Horvath, L. Determination by TLC of the unknown substances by using HETP ratios between the unknown and the reference component, 2.  
 — Marjanović-Krajovan, V., and Šoljić, Z. Adapter for solvent evaporation on the top of the plate for prolonged development time in TLC, 2786.  
 Isurkel'taub, G. N. See Luskina, B. M., 1387.  
 Isurkel'taub, N. M., Luskina, B. M., and Palamarchuk, N. A. Indirect determination of traces of water in gases, 1764.  
 Isurkevich, N. M. See Vengrinovich, L. M., 3048.  
 Isurkstra, J., Toerien, P. V. S., and Wet, W. J. de. Neutron-activation determination of vanadium in sodium chloride, 42.  
 Turner, C. H. See Wellenstein, H. F., 3336.  
 Turner, N. A. See Burns, D. J. W., 875.  
 Turner, T. D., and Wightman, S. L. Phthalaldehyde as a spray reagent for thin-layer chromatograms, 2072.  
 Turulina, O. P. See Zakhariya, N. F., 2413.  
 Turvey, J. R., Bowker, D. M., and Harris, Michael J. Infra-red spectra of carbohydrate sulphates, 1324.  
 Turvich, S. M. See Kosenko, N. N., 3063.  
 Tušl, J. Photometric methods for determination of fluorine, 132. Determination of manganese in feeding-stuffs by the formaldoxime method after separation by ion-exchange chromatography, 987.  
 Tustanowski, S. Polarographic determination of halide ions in the effluent from chromatographic columns, 1242. Separation of halide ions on hydrous zirconium oxide, 1243. Position of halide ions and their sequence of adsorption on aluminium oxide, 1244.  
 Tutorskii, I. A. See Alishoev, V. R., 1395.  
 Tvřizická, E. See Beran, P., 1201.  
 Tweedale, C. R. See Peaker, F. W., 429.  
 Twelves, R. B. See Archer, V. S., 1863.  
 Twine, J. R. See Williams, C. H., 796.  
 Twine, M. E. See Cook, C. E., 1444.  
 Tykva, R. Errors and accuracy of simultaneous determination of tritium and carbon-14 in organic substances with an internal gas counter, 1300.  
 — See also Rauch, P., 1299.  
 Tylová, M. See Dušínský, G., 354.

## U

- Uchikawa, H., Inoue, T., Kawashima, I., Watanabe, T., Ui, T., Fukasawa, T., and Asada, E. [Annual review, 1967]—X-ray analysis, 1734.  
 Uden, P. C. See Stephen, W. I., 568.  
 Ueberreiter, K. See Sotobayashi, H., 2570.  
 Ueda, K., Yamamoto, Yoshikazu, and Ueda, S. Extraction - spectrophotometry of palladium with benzil  $\alpha$ -monoxime, 1283.  
 Ueda, S., Yamamoto, Yoshikazu, and Takenouchi, H. Volumetric determination of molybdenum with dithione as indicator, 1857.  
 — See also Ueda, K., 1283.  
 Ueno, Kaoru. See Ishimori, Tomitaro, 1734.  
 Ueno, Keihei. See Kaneko, Hisamitsu, 1760, 1854, Tōei, K., 1734, and Yamaguchi, H., 16.  
 Ueno, T., Kurihara, N., and Nakajima, M. Synthetic studies of carbohydrate antibiotics. III. GLC of trifluoroacetyl derivatives of carbohydrates including cyclitols, 305.  
 Uesugi, K. See Murakami, T., 417.  
 Ugum, K. L. See Kellum, G. E., 235.  
 Uhde, W.-J., and Köhler, U. Testing of plastic containers used for food: determination of acrylonitrile and styrene in the volatile constituents of styrene polymers, 271.  
 Ui, T. See Kamada, H., 154, and Uchikawa, H., 1734.  
 Ukrainskii, Yu. M. See Malyukov, B. A., 1194.  
 Umar, M. See Chalmers, R. A., 1104.  
 Umemoto, K. See Hozumi, K., 202, 1305.  
 Umazawa, Y. See Fujiwara, S., 2318.  
 Underwood, C. E. See Laessig, R. H., 892.  
 Underwood, P. J. Automated analysis for urinary bromide, 292.  
 Unimed Incorporated. Determination of chorionic gonadotropin in urine, 2652.



- United Kingdom Atomic Energy Authority.** Determination of non-uranic alpha-emitters in uranium trioxide and uranyl nitrate from the re-processing of natural uranium fuels, 1937. Determination of plutonium in plutonium metal by difference spectrophotometry, 1939.
- United States Atomic Energy Commission.** Air-sampling method and apparatus for the measurement of air-borne dust contamination, 2221.
- Upor, E., and Görbicz, L.** Analytical applications of alkyl phosphates. II. Extraction of uranium with dibutyl phosphate, 1181.  
— See also Mohai, M., 1181.
- Uralets, V. P.** See Golovnya, R. V., 1325.
- Uraneck, C. A., Burleigh, J. E., and Cleary, J. W.** Determination of organometallic compounds of Group I, Group II and some Group III metals, 2528.
- Urban, T.** See Soczewiński, E., 626.
- Urbański, J.** Spectrophotometric determination of small amounts of epoxy-groups in polymers, 3109.
- Urváková, D.** See Skála, O., 1671.
- Usatenko, Yu. I.** See Surmil, A. M., 2869, and Tulyupa, F. M., 122, 1878.
- Ushakov, A. N.** See Vaver, V. A., 3061.
- Usher, C. D., Favell, D. J., and Lavery, H.** Determination of vitamin A and  $\alpha$ - and  $\beta$ -carotenes in margarine, including the results of a collaborative test, 2717.
- Usova, É. P., and Lipshtein, A. R.** Determination, by GLC, of nitro-compounds as impurities in 3-chloroaniline and 1-chloro-3-isocyanatobenzene, 1349.
- Usova, L. V.** See Chudina, R. I., 1141.
- Ussary, J. P.** See Gehrke, C. W., 2211.
- Ustinova, V. I., Svechnikova, E. A., and Korovina, A. G.** Spectrographic analysis of metallic chromium by the sprinkling-blowing method, 2999.
- Usui, Y.** See Komatsu, Sumio, 1256.
- Utevskii, L. M.** Electron microscopy of metals in the USSR: review, 4.
- Utkin, B. N.** Potentiometric determination of aniline and diphenylamine in mixtures obtained during the catalytic vapour-phase conversion of aniline into diphenylamine, 746.
- Utsumi, I.** See Kodama, T., 2103.
- Utsumi, S., Ito, S., Machida, W., and Isozaki, A.** Spectrophotometric determination of micro amounts of alkylbenzenesulphonates in river water, 1603.  
— Machida, W., and Ito, S. Organic micro-analysis by colorimetry. I. Simultaneous determination of chlorine and sulphur, 199.  
— See also Okutani, T., 1849.
- V**
- Vadodaria, D. J., Vora, M. N., and Mukherji, S. P.** Colorimetric estimation of diethylcarbamazine citrate in pharmaceutical preparations, 3232.
- Vaedtke, J.** See Butruk, E., 2059.
- Vagramyan, A. T.** See Kudryavtsev, V. N., 2465.
- Vahrman, M.** See Ahmed, M. S. A., 2558.
- Vaidyeswaran, R.** See Rao, M. J., 1369.
- Vainer, M. G.** See Kuz'menko, N. I., 2895.
- Vainshtein, E. E.** See Taskaeva, T. P., 582.
- Vajta, L., Pálmai, G., Szebenyi, I., and Tóth, G.** Determination, by activation analysis, of trace elements in crude oils, 759.  
— Szebenyi, I., and Vermes, E. Problems in the investigation of aqueous effluents from the petroleum industry. II. Infra-red determination of oils, 1948.
- Vakhrushev, Yu. A., and Gadyuchkina, A. T.** Determination of benzenecarboxylic acids and their derivatives, 1939.
- Vakhtel', M. I., and Chebotareva, M. M.** Photometric determination of iron with sodium sulphasalicylate, 2462.
- Valentini, M. T.** See Maxia, V., 885.
- Valkana, C. G.** See Hadjiioannou, T. P., 1859.
- Valle Fuentes, F. J., and Burriel-Martí, F.** Trace elements in cement: spectrophotometric determination of cobalt and nickel, 3046.
- Vallega-Magasich, A.** See Morales-Malva, J. A., 886.
- Vanasse, G. A.** See Sakai, H., 2284.
- Van Assendelft, O. W.** See Assendelft, O. W. van.
- Van Cauwenberghe, K., Vandewalle, M., and Verzele, M.** Coupling of a gas chromatograph and a mass spectrometer through the direct insertion lock, 2802.
- Vance, D. E., and Sweeley, C. C.** Determination of the neutral glycosyl ceramides in human blood, 836.
- Vancea, M., and German, A.** Colorimetric analysis of organomercury compounds. I. Determination of ethylmercury chloride, 2527.
- Van de Langerijt, J. J. A. M.** See Langerijt, J. J. A. M. van de.
- Vandenbussche, G.** See Clayer, A., 3.
- Van den Dool, H.** See Dool, H. van den.
- Vanden Heuvel, W. J. A., and Braly, K. L. K.** GLC of methanesulphonates and mixed silyl ethers of bile acids, 1447.
- Van den Reek, S.** See Reek, S. van den.
- Vanderborgh, N. E., and Spall, W. D.** Accurate measurement of small temperature differences, 1721.
- Vanderecock, C. E., and Guerrero, H. C.** Effects of chemical preservatives and storage on constituents used to characterise lemon juice, 2178.
- Vanderheiden, B. S.** Separation of deoxyribonucleotides from ribonucleotides by paper chromatography, 2658.
- Vanderkeel, J. V.** See Roosels, D., 3129.
- Van der Meeren, A. A. F.** See Meeren, A. A. F. van der.
- Van der Merwe, P.** See Merwe, P. van der.
- Van der Reyden, A. J.** See Reyden, A. J. van der.
- Van der Veen, J.** See Agahigian, G., 486.
- Van der Voort, F. H.** See Macdonald, A. M. G., 2411.
- Van der Wegen, T. P. A.** See Wegen, T. P. A. van der.
- Van Der Weide, B. M.** See Blazejczak, J., 2497.
- Van de Veerdonk, F. C. G.** See Veerdonk, F. C. G. van de.
- Vandewalle, M.** See Van Cauwenberghe, K., 2802.
- Van Dijk, J. H.** See Dijk, J. H. van.
- Van Duyn, R. P., and Aikens, D. A.** Chemically selective polarographic detector for gas chromatography, 2276.
- Van Galen, G. W.** See Galen, G. W. van.
- Van Gent, C. M.** See Gent, C. M. van.
- Van Gheluwe, J. E. A.** Determination of the oxidation state of wort and beer, 2199.
- Van Gogh, H.** See Gogh, H. van.
- Van Handel, E.** Direct micro-determination of sucrose, 2612.
- Van Heerden, J.** See Heerden, J. van.
- Vanheule, R.** See Adriaenssens, K., 2077.
- Van Kampen, E. J.** See Kampen, E. J. van.
- Van Langermeersch, A.** See Langermeersch, A. van.
- Van Leeuwen, H. J. M.** See Sutherland, B. J., 2176.
- Van Loon, J. C.** Determination of aluminium in high-silica materials, 2946.

- an Loon, J. C., and Parissis, C. M. Determination of titanium in silicates by atomic-absorption spectrophotometry, 1819.
- Parissis, C. M., and Kingston, P. W. Analysis of very small samples of sulphide minerals, 2991.
- Neste, W. A. H. See Neste, W. A. H. van.
- Ooiij, W. J. See Ooiij, W. J. van.
- Oort, A. See Oort, A. van.
- Os, F. H. L. See Os, F. H. L. van.
- Tets, A. See Tets, A. van.
- Thoi, N. See Nguyen Van Thoi.
- Zyl, C. R. See Strelow, F. W. E., 1772, 1784.
- arol, L. Spectrophotometric determination of dipyrone in veterinary injections, 1516. Direct spectrophotometric determination of propantheline bromide in Neopepulsan duplex tablets, 2696.
- arga, D. See Berényi, D., 3355.
- arga, Laszlo, Kelemen-Küttel, I., and Kovács, A. Paper-chromatographic examination of the radiochemical impurities in sodium iodohippurate labelled with iodine-131, 2159.
- See also Scheer, K. E., 1426.
- arga, L. See Berényi, D., 3355.
- arga, S. See Tólgessy, J., 2328.
- urkey, T. J., and Sandler, S. Analysis of 10- $\beta$ -molar aqueous solutions of the oxidation products of isopentane by GLC, 2506.
- arsel, C. See Jones, R. M., 1986.
- artanyan, S. A., Noravany, A. S., and Zhmagortsyan, V. N. Study of reciprocal transfer reactions of six-membered heterocyclic ketones by GLC, 1533.
- See also Melkonyan, S. A., 1315.
- artanyan, S. V. See Tarayan, V. M., 2459.
- ury, S. See Henty, D. N., 485.
- arzaru, E., and Cormos, A. Analysis of ferrites, 150.
- asconcelos, M. de Barros e. See Barros e Vasconcelos, M. de.
- asil'ev, V. P., and Vorob'ev, P. N. Effect of nature and concentration of acid in the determination of titanium with hydrogen peroxide, 39.
- asil'eva, L. N., and Pozdnyakova, A. A. Determination of molybdenum by a.c. polarography, 1241.
- and Yustus, Z. L. Polarographic determination of antimony with an imposed alternating potential, 1210. Determination of small amounts of chlorine in selenium by a.c. polarography, 1852.
- asilevskaya, L. S., Kondrashina, A. I., Vlasova, L. S., and Chibisova, G. P. Spectrochemical determination of impurities of arsenic in germanium and its inorganic compounds and in acids, 2953.
- sk'kovskaya, A. A. See Bykov, V. T., 220.
- sk'kovskii, V. E. See Bykov, V. T., 220.
- ver, V. A., Dorogov, V. V., and Bergel'son, L. D. Diol lipids. V. Micro-acetylation of diols and triols for gas-chromatographic analysis, 2041.
- Ushakov, A. N., and Bergel'son, L. D. GLC of free polyhydric alcohols, 3061.
- ovenko, M. E., and Lisichenok, S. L. Photometric determination of rare-earth metals with arsenazo III in the presence of EDTA, 598.
- ovenko, N. V. See Ovcharenko, F. D., 430.
- ovtsova, E. A., Gorovits, T. T., and Ol'gert, I. V. Gas-chromatographic behaviour of pentenylcresols and methylpentenylanisoles, 1346.
- EB Arzneimittelwerk Dresden. Determination of 2-hydroxybutyrate dehydrogenase activity, 1481.
- VEB Leuna-Werke 'Walter Ulbricht'. Process for the gas-chromatographic separation of hydrocarbons on molecular sieves, 3091.
- Vecchi, M. See Vetter, W., 338.
- Večerek, B., Štěpán, J., Hynie, I., and Kácl, K. Micro-modification of quantitative electrophoresis in agar gel, 2806.
- See also Hynie, I., 1407.
- Večerková, J., Kácl, K., and Rosnecká, J. Paper chromatography in the toxicological identification of drugs. X. Identification of phenmetrazine in urine, 3137.
- Veen, E. See Schuller, P. L., 382.
- Veerdonk, F. C. G. van de. See Balemans, M. G. M., 860.
- Végh, A. See Grünwald-Fischer, A., 2163.
- Veigel, J. M. Accurate temperature control of the Beckman DK-2 recording spectrophotometer, 2824.
- Vela, F. M. See Mazuelos Vela, F.
- Velazquez, J. A., and Hileman, O. E., jun. Precipitation of the cyclohexane-1,2-dione dioxime-palladium<sup>II</sup> complex from homogeneous solution, 3037.
- Veldink, R. See Jeltjes, R., 2792.
- Veldwijk, G. Complexometric determination of total zinc in lithopone, 1979.
- Vellar, O. D. See Askevold, R., 808.
- Venghiattis, A. A. Direct sampling of solids for atomic-absorption spectrophotometric analysis without prior dissolution, 1661.
- and Whitlock, L. Determination of metals in their ores by solid sampling, 1116.
- Vengrinovich, L. M., Vladimirovskaya, E. V., and Turkevich, N. M. Characteristic colour reactions of compounds containing labile methylene-group hydrogen atoms, 3048.
- Venkatachalam, K. A. See Sinha, A. K., 2550.
- Venkatasubramanian, V. See Athavale, V. T., 684.
- Venkateswarlu, C. See Athavale, V. T., 684, and Mathur, P. K., 668.
- Venter, J. H. See Lange, P. W. de, 2363.
- Vepřek-Šiška, J. See Wagnerová, D. M., 1226.
- Verbeek, F. See Ooghe, W., 602.
- Verbić, A. See Stefanac, Z., 210.
- Verbitskaya, V. A., Stepin, V. V., and Kamaeva, L. V. Determination of phosphorus in chromium concentrate and vanadium pentoxide by using chromatographic separation, 1834.
- Verblyudova, N. I. See Samosvat, L. S., 1597.
- Verdizade, A. A., and Mekhtiev, M. M. Determination of indium by the periodate method, 1168.
- Verduin, P. A. See Meijer, J. W. A., 3.
- Veretil'nyi, A. Ya., Prokof'ev, A. I., Chibrikina, V. M., and Shabalkin, V. A. Device for recording the second derivative of an ESR signal, 2830.
- Verhaar, A. L. T. See Meeren, A. A. F. van der, 3096.
- Verheyden, J. See Colfs, B., 2089.
- Verheyden, L., Klein, K., and Kind, H. Bakeable and direct joints between a fused quartz tube and a metal tube, 2770.
- See also Adams, O., 1665.
- Verkhovodov, P. A. Simultaneous determination, by X-ray spectrography, of ruthenium, rhodium, palladium and silver, 2343.
- Verly, W. G. See Frère, J.-M., 316.
- Verma, K. K. See Parihar, D. B., 789, 1399.
- Verma, M. R., Amar, V. K., and Gangopadhyaya, N. Volumetric determination of ferrous oxalate, 730.
- Vermes, E. See Vajta, L., 1948.
- Versino, B. See Geiss, F., 3, 2796.



- Verzele, M. See Van Cauwenberghe, K., 2802.
- Veselago, L. I., and Gertseva, N. S. Determination of tellurium and zinc in semiconductor materials by a.c. polarography, 2445.
- Veselková, D., and Kopriva, B. Determination of sugar acids by TLC, 2516.
- Vesely, K. See Pražák, M., 166.
- Vesely, V. See Příbil, R., 233.
- Vestergaard, P., Witherell, C., and Piti, T. Magazine-fraction collector for multi-column liquid chromatography, 1629.
- See also Sayegh, J. F., 1037.
- Vetro, R. I. See Beckman, H. F., 1557.
- Vetsch, A. Gas chromatograph-mass spectrometer link-up: recent developments, 2849.
- Vetter, A. F., and Kim, S. N. Liquid permeation of isopropyl alcohol and water in a silicone rubber, 1919.
- Vetter, W., Vecchi, M., Gutmann, H., Rüegg, R., Walther, W., and Meyer, P. Gas-chromatographic and mass-spectrometric investigation of phytalubiquinone, vitamin K<sub>1</sub> and vitamin K<sub>2</sub>, 338.
- Vetters, A. F. See Deyne, V. J. R. de, 1634.
- Vezina, C. See Sehgal, S. N., 356.
- Viala, A. See Cano, J. P., 812.
- Vicente-Pérez, S., and Córdova-Orellana, R. Analytical chemistry of the less-common oxidation states. VIII. Determination of cerium<sup>III</sup> with cyanomolybdate, 1805.
- See also Lucena-Conde, F., 654.
- Vickers, G. D. See Agahagian, G., 486.
- Vidal, A. J. See Juliano, B. O., 2709.
- Vignerot, C., and Siest, G. Automated determination of urea in a protein medium without dialysis, 853.
- Vignoli, L. See Cano, J. P., 812.
- Viktorova, N. M. See Terent'ev, A. P., 1103.
- Villeneuve, V. R., and Barbier, M. Separation of amino-acids containing sulphur by paper chromatography and TLC, 874.
- Viltange, M. Thermogravimetry and differential thermal analysis of hydrated sodium peroxide and of commercial sodium peroxide, 1135.
- Vinarov, I. V., Kovaleva, E. I., and Byk, G. I. Extraction of zirconium and hafnium thiocyanates with acetophenone, 2420.
- Vincent, H. A., and Volborth, A. High-precision determination of silicon in rocks by fast-neutron activation analysis, 88.
- Vin'kova, V. A. See Gusev, S. I., 1887.
- Vinkovetskaya, S. Ya., and Levitskaya, T. I. Determination of traces of vanadium<sup>IV</sup> and iron in vanadium<sup>V</sup> oxide, 2988.
- Vinogradov, A. V., Apirina, R. M., and Pavlova, I. V. Complexometric determination of beryllium or uranium by means of cobalt, 2891.
- Vinogradova, E. N. See Alimarin, I. P., 2384.
- Vioque, E., Abe, Y., and Martel, J. Detection of antioxidants in fats, 1553.
- Visapää, A. See Ant-Wuorinen, O., 264.
- Visser, J. See Boer, F. J. de, 1864; Claassen, A., 70, and Engelsman, J. J., 2935.
- Viswanathan, C. V. Chromatographic analysis of plasmalogens: review, 2850.
- Phillips, F., and Mahadevan, V. Chromatographic separation of homologues, vinylogues and geometrical isomers of methyl substituted-vinyl ethers, 715.
- Viswanathan, R. See Krishnamoorthy, T. M., 3280.
- Viswanathan, V. See Mahn, F. P., 2160.
- Vitorović, S. L. See Pejković-Tadić, I., 3269.
- Vitozhents, G. Ch. See Niewodniczański, J., 2374.
- Vitt, S. V., Saporovskaya, M. B., and Belikov, V. M. Determination of traces of D-amino-acids in natural amino-acids, 2078.
- Vitushkina, I. N., and Fain, É. E. Spectrographic determination of rhenium in molybdenite, 3005.
- Vlad, L. See Ceausescu, D., 2441.
- Vladimirova, L. M., Yagodin, G. A., and Chekmarev, A. M. Photometric determination of zirconium or hafnium with catechol violet in sulphuric acid medium, 2962.
- Vladzimirska, E. V. See Vengrinovich, L. M., 3048.
- Vlasov, N. A. See Morgen, É. A., 2486.
- Vlasova, L. S. See Vasilevskaya, L. S., 2953.
- Vlastnik, J., and Horáček, J. Direct determination of sodium in fuel oils by atomic-absorption spectrophotometry, 1363.
- Vodár, B. See Castex, M.-C., 3332.
- Voegeli, P., and Christen, F. Determination of combined halogen in organic compounds with piperidine, 1302.
- Vogel, J., and Berner, C. Differentiation of soft and hard wheats by gas chromatography, 1095.
- Vogel, R. S. Instrumental micro-analysis by emission spectroscopy, 3319.
- Vogel, W. H., Ahlberg, C. D., Di Carlo, V., and Horwitt, M. K. Distinction between *p*-tyramine and 2-(3,4-dimethoxy)phenylamine after TLC, 2068.
- Vogeler, K. Colorimetric and polarographic determination of propineb residues in and on plants, 2724.
- Voigt, A. F. See Korthoven, P. J. M., 131.
- Voigt, J., and Noske, R. TLC separation of glucose, fructose and sucrose, 3246.
- Voinovich, I. A., Legrand, G., Hameau, G., Katalin, and Louvrier, J. Effect of certain organic compounds on results of flame-photometric determination of aluminium, 73.
- Voitkovskii, Yu. B. See Bokshstein, B. S., 1745.
- Volborth, A. See Vincent, H. A., 88.
- Voliotis, S. D. See Polydoropoulos, C. N., 1832.
- Volkov, A. F. See Zarinskii, V. A., 1696.
- Volkova, A. I. See Babko, A. K., 1793.
- Volkova, A. P. See Isayan, G. A., 2575.
- Volodina, M. A., and Kon'kova, I. V. Isopropenyl acetate as an acetylating agent in organic analysis: determination of primary and secondary amines, 1932.
- See also Terent'ev, A. P., 203.
- Volodina, V. I., Tarasov, A. I., and Kurbatov, D. I. Polarographic determination of double-bonds derived from fumarate in copolymers of unsaturated polyesters, 3112.
- Volpicelli, R. J., Stiefvater, O. L., and Flynn, G. W. Trace-contaminant identification in gases or air by microwave double-resonance spectroscopy, 2242.
- Von Arx, E. See Arx, E. von.
- Von Boroviczény, K. G. See Boroviczény, K. G. von.
- Von der Geest, A. C. See Geest, A. C. von der.
- Vondráčková, J., and Štrauchová, O. Chromatographic determination of low concentrations of tetracyclines in complex nutrient fluids as their complexes with tetraphenylborate, 3210.
- Von Fragstein, P. See Fragstein, P. von.
- Von Klein-Wisenberg, A. See Klein-Wisenberg, A. von.
- Von Redlich, D. See Redlich, D. von.
- Von Stryk, F. G. See Stryk, F. G. von.
- Von Sturm, F. See Sturm, F. von.
- Vora, M. N. See Vadodaria, D. J., 3232.



- Vrliček, J.** Biamperometric titrations with chelating agents, 545.
- and Peták, P.** Amperometry with two polarizable electrodes. XV. Chelatometric determination of small amounts of bismuth<sup>III</sup>, 1213.
- Vrob'ev, L. N.** Potassium-selective micro-electrodes with precipitate in the tip, 2878.
- Vrob'ev, P. N.** See **Vasil'ev, V. P.**, 39.
- Vrob'ev, V. V.** Study of lipase activity in the contents of the duodenum, 2117.
- Vronkov, M. G.** See **Fedotova, L. A.**, 3054.
- Vrozbitskaya, K. F.**, and **Studenskaya, L. S.** Pulse-polarographic determination of traces of lead and zinc in metallic chromium and of zinc in metallic aluminium, 1125.
- See also **Kharkover, M. Z.**, 1163.
- Vrozheeva, V. P.** Determination of aniline, *p*-chloroaniline and 2,4-diaminobenzene in technical *o*-chloroaniline by TLC, 747.
- Vshel, D.** See **Blackmore, R. H.**, 1019.
- Vssen, P. G. T.** See **Jackson, P. F. S.**, 1672.
- Vzisova, V. F.** 3-Cyano-1,5-bis-(2-hydroxy-5-sulphophenyl)formazan as indicator in complexometric determination of germanium, 2951.
- and Podchainova, V. N.** Determination of germanium in industrial concentrates by difference photometry, 2412.
- Viakich, Yu.** See **Miloserdov, P. N.**, 258.
- Villaume, R.** See **Pupin, F.**, 3244.
- V'ison, E. K.**, **Stakheev, Yu. I.**, and **Yakobi, N. M.** Electrical granulometric analysis of metal powders, 3370.
- Vlikh, A. I.** See **Bogat'yev, V. L.**, 594.
- Vlterin, J.**, and **Hovorka, J.** Potentiometric determination of hypochlorite with iron<sup>II</sup>, 1254.
- Vurek, G. G.** Emission photometry of picomoles of calcium, magnesium and other metals, 283.
- Vazovskaya, L. M.** See **Zharovskii, F. G.**, 2857.
- Vaydra, F.**, and **Horáček, J.** Amperometry with two polarisable electrodes: chelatometric determination of rare-earth metals, 601.
- Vysotskaya, V. N.**, and **Kurilovich, T. I.** Volumetric determination of silicic acid in difficultly decomposable fluoride slags, 2945.
- Vysotskii, V. V.** See **Rudnevskii, N. K.**, 1790.
- Vsyukova, R. R.** See **Badovskaya, L. A.**, 2509.
- W**
- Waaler, T.** See **Holm, V.**, 3198, and **Karlsen, J.**, 350.
- Waerst, V.** See **Juhl, L.**, 1493.
- Wachberger, E.** See **Kainz, G.**, 1297.
- Wachs, H.**, and **Hanley, A. V.** Pyrethrum analysis by an ethylenediamine method, 1000.
- Wada, T.** See **Murata, H.**, 2014.
- Waddington, D. J.** See **Crawforth, C. G.**, 2525.
- Wadham, P. R.** Time-of-flight mass spectrometer, 2849.
- Wagendristel, A.**, **Ebel, H.**, and **Lihl, F.** X-ray determination of particle size of coarsely crystalline substances, 1731.
- Wagenknecht, C.** See **VEB Arzneimittelwerk Dresden**, 1481.
- Wagner, A.** Determination of faecal protein excretion, 329.
- Wagner, E. F.** Separation of phosphates by TLC and thin-layer electrophoresis. II. Qualitative separation of polyphosphates by thin-layer electrophoresis, 2969.
- Wagner, G.** See **Pflegel, P.**, 927.
- Wagner, H.**, **Hörhammer, L.**, and **Macek, K.** Separation of phenols by TLC on polyamide, cellulose and silica gel, 1344.
- Wagner, H.** See also **Hörhammer, L.**, 2685.
- Wagner, J.** See **Matthias, W.**, 2.
- Wagner, M.** See **Deluzarche, A.**, 979.
- Wagnerová, D. M.**, **Eckschlager, K.**, and **Vepřek-Siška, J.** Determination of ozone in aqueous solution, 1226.
- Wahba, S. K.** See **Karawya, M. S.**, 1958.
- Waksmundzki, A.**, and **Różyło, J.**  $R_F$  values and structure of the adsorbent in TLC with pure solvents as the mobile phase, 2.  $R_F$  values and structure of the adsorbent in TLC with mixed solvents as the mobile phase, 2.
- Walborg, E. F., jun.**, and **Lantz, R. S.** Separation and quantitation of saccharides by ion-exchange chromatography with use of boric acid-glycerol buffers, 2025.
- Walczyk, W.** See **Głabik, B.**, 714.
- Waldeck, B.** Fluorimetric determination of  $\alpha$ -methylnoradrenaline, 3134.
- Wales, P. J.** See **McLeod, H. A.**, 1558, and **Mendoza, C. E.**, 2219.
- Walicka, T.** See **Reszko-Turska, W.**, 3199.
- Walisch, W.**, and **Jaenicke, O.** Measuring arrangement for automated ultra-micro determination of halogen in organic compounds, 1303.
- and **Marks, W.** Ultra-micro determination of oxygen in organic compounds, 699.
- Walker, G. T.** Recognition and determination of iron in cosmetic products by colorimetric methods, 2561.
- Walker, J. Q.** Multi-diameter separation column for gas-chromatographic analysis of organic compounds, 2268.
- Walker, L. A.** See **Leinweber, F.-J.**, 348.
- Walker, R. T.** See **Tittensor, J. E.**, 896.
- Walkling, P.** See **Halász, I.**, 2775, 2776.
- Wall, F. E.** See **Rozsa, J. T.**, 2466.
- Wall, J. S.** See **Christianson, D. D.**, 2099.
- Wall, M. E.** See **Cook, C. E.**, 1444.
- Wall, W. F.** See **Savill, N. G.**, 522.
- Wallace, J. E.** Ultra-violet spectrophotometric determination of chlorprothixene in biological specimens, 296. Ultra-violet spectrophotometric determination of phenaglycodol in biological specimens, 3136.
- Wallach, E. E.**, and **Touchstone, J. C.** Comparison of methods for pregnadiol determination, 847.
- Walsh, R.** See **Conder, J. R.**, 2265.
- Walter, J. P.**, **Kerschersid, M. L.**, and **Merkle, M. G.** GLC determination of fluorodifen residues in soya beans, 2742.
- Walther, W.** See **Vetter, W.**, 338.
- Walton, A. G.** See **Furedi, H.**, 2589.
- Waltzinger, W.** See **Groulade, J.**, 1461.
- Wang, K.-T.**, **Chen, K.-Y.**, and **Weinstein, B.** Amino-acids and peptides. XV. Separation of *N*-benzyloxycarbonyl derivatives of amino-acids, and their esters, 3166.
- See also **Huang, J.-T.**, 1514, and **Woods, K. R.**, 1454.
- Wänninen, E.**, and **Lindholm, A.** Salt effects in atomic-absorption spectrophotometry, 44.
- Waravdekar, V. S.** See **Saslaw, L. D.**, 337.
- Warburton, C. D.**, and **Przybyłowicz, E. P.** Colorimetric determination of thiosulphate in gelatin, 277.
- Ward, D. N.** See **Arnott, M. S.**, 325.
- Ward, F. N.**, and **Nakagawa, H. M.** Atomic-absorption determination of bismuth in altered rocks, 184.
- Warmoth, D.** See **Electronic Switchgear (London) Ltd.**, 1701.
- Warneck, P.** See **Poschenrieder, W. P.**, 2834.
- Warner, C. G.** See **Shannon, T. W.**, 1678.

- Warner-Lambert Pharmaceutical Co.** Manually operated liquid sampling and pipetting apparatus, 1613.
- Warnqvist, B.** See **Ingri, N.**, 531.
- Warren, F. L.** See **Kay, H. L.**, 843.
- Warren, R. J., Eisdorfer, I. B., Thompson, W. E., and Zarembo, J. E.** Pharmaceutical applications of internal reflectance spectroscopy, 1487.
- **Thompson, W. E., Zarembo, J. E., and Eisdorfer, I. B.** Ultra-violet and attenuated total reflectance infra-red spectra of chlorpromazine metabolites, 814.
- See also **Eisdorfer, I. B.**, 2676.
- Warren, R. W., Schneider, A., and Moore, R. E.** Use of alkyl-bending vibration frequencies in the characterisation of alkyladamantane structures, 2542.
- Washington, R. J.** See **Heathcote, J. G.**, 320.
- Wasicky, R., and Akisue, G.** Use of elevated temperature or vacuum to improve TLC determination of active principles of drugs, 1492.
- Wasilewska, M.** See **Lubecki, A.**, 2493.
- Wasson, J. T., and Kimberlin, J.** Chemical classification of iron meteorites. II. Determination of nickel, gallium, germanium and iridium in iron meteorites, 190.
- Watanabe, K.** See **Ishimori, Tomitaro**, 1734.
- Watanabe, M.** See **Kajiyama, R.**, 155.
- Watanabe, T.** See **Uchikawa, H.**, 1734.
- Watanabe, Y., Isomura, K., and Tomari, Y.** Gas-chromatographic determination of carbonyl sulphide in propene, 215.
- Waters, D. A.** See **Anderson, N. G.**, 1034.
- Watkins, P. J.** Effect of carbonyl groups on the determination of creatinine, 858.
- Watson, J. E.** See **Brooks, C. J. W.**, 1442.
- Watson, J. E., Fremlin, J. H., and Stubbs, M. I.** Distribution of carbon in human tooth enamel determined by charged-particle activation analysis, 1404.
- Watt, W. B.** See **Jennings, A. C.**, 876.
- Watts, R., and Dils, R.** GLC separation of triglycerides, 2621.
- See also **Smith, S.**, 2622.
- Wawschinek, O., Beyer, W., and Paletta, B.** Determination of thallium in biological material by extraction - photometry, 1998.
- Wear, K. B.** Use of a McLeod gauge with condensable gases, 2772.
- Weatherston, J.** See **Harrison, V. J.**, 1434.
- Weaver, C.** Determination of zinc in coal, 690.
- Weaver, V. C.** Separations with partition solvents on adsorbent-loaded paper, 2.
- Webb, F. C.** See **Flynn, D. S.**, 2343.
- Webb, G.** See **Hardy, J. A.**, 447.
- Weber, A. P., and Sindram, E. D. A.** Determination of bilirubin pigments in urine, 890.
- Weber, E.** See **Ackermann, G.**, 2, 1846.
- Webs, K.** See **Starosick, E.**, 692.
- Webster, C. B.** See **Cunningham, J. G.**, 26.
- Wechter, M. A.** See **Korthoven, P. J. M.**, 131.
- Weder, H. J., and Bickel, M. H.** Separation and determination of imipramine and its metabolites from biological samples by GLC, 1096.
- Wegen, T. P. A. van der.** Identification of some local anaesthetics and antihistamines by means of crystal reactions. I; II, 2697; III, 3222.
- Wegmüller, H.** Use of the separating column in gas chromatography, 1061.
- Weik, R. W.** See **Iverson, J. L.**, 394.
- Weil-Malherbe, H., and Bigelow, L. B.** Fluorimetric determination of adrenaline and noradrenaline: modified trihydroxyindole method, 2641.
- Weinert, G. W.** See **Grob, R. L.**, 1063.
- Weinstein, A., Medes, G., and Litwack, G.** Isotopic determination of aminotransferase activity, 341.
- Weinstein, B.** See **Wang, K.-T.**, 3166.
- Weinstein, I. B.** See **Grossbach, U.**, 2659.
- Weiss, J. B.** See **Langley, T. J.**, 887.
- Weiss, P. J., Taliaferro, B., Huckins, R., and Chastonay, R.** Identification of antibiotics in pharmaceutical preparations. I. Penicillin types, 1507.
- Weiss, R.** See **Flaschka, H.**, 2243.
- Weissler, H. E.** See **Garza, A. C.**, 2198.
- Weissman, I., Butucelea, A., and Nistor, R.** Spectra determination of purity of zinc, 61.
- Weist, F. R.** Determination of oxazepam in biological fluids by TLC, 2605.
- Weisz, H., and Klockow, D.** Volumetric analysis and catalysis. III. Potentiometric determination of silver and mercury, 571.
- Weldrick, G. J., Wood, A. J., Crossley, D., Phillips, G., and Milner, G. W. C.** Determination of ruthenium in uranium carbide-ruthenium cermet and in plutonium carbide/uranium carbide-ruthenium cermet, 610.
- Wellenstein, H. F., Turner, C. H., and Robertson, W. W.** Technique for producing extremely thin walls and small holes in glass tubing for use in mass spectrometry, 3336.
- Wells, C. E.** Determination of pesticide residues in foods and animal feeds, 1555.
- Wells, D. G.** See **Casey, H. J.**, 2647.
- Welsh, L. H., and Sammul, O. R.** Determination of isoprenaline in deteriorated inhalations and injections, 1.
- Welshman, S. G., and Rixon, E. C.** Colorimetric determination of lactate dehydrogenase isoenzymes by urea inhibition, 2107.
- Welki, D.** See **Fowles, I. A.**, 448.
- Wendt, H. R.** See **Peart, R. F.**, 1818.
- Wenninger, J. A., Yates, R. L., and Dolinsky, M.** High-resolution i.r. spectra of some naturally occurring sesquiterpene hydrocarbons, 1371.
- Determination of sesquiterpene hydrocarbons of commercial copaiba balsam and American cedarwood oil by i.r. spectroscopy, 1372.
- West, C. D.** Ultrasonic sprayer for atomic-emission and -absorption spectrochemistry, 2298.
- West, D. B.** See **Dallas, F. C.**, 974.
- West, P. W.** See **Ramakrishna, T. V.**, 2896.
- West, T. S., and Williams, X. K.** Atomic-fluorescence spectrophotometry of silver with a high-intensity hollow-cathode lamp as source, 2359.
- See also **Dagnall, R. M.**, 105, 1817, 1839, 2427.
- Hingle, D. N.**, 1157, 2861, and **Kirkbright, G. E.**, 3329.
- West, W. E.** See **Bowman, P. B.**, 3214.
- Wester, P. O.** See **Samsahl, K.**, 1985.
- Westergren, K.** See **Kiesvaara, M.**, 1574.
- Westmore, J. B.** See **Levy, R. L.**, 3312.
- Wet, W. J. de, and Behrens, G. B.** Highly sensitive spectrophotometric determination of rare-earth metals and nickel, 1801.
- See also **Lange, P. W. de**, 2363, and **Turkstra, J.**, 42.
- Wetselaar, R.** See **Frenay, J. R.**, 2737.
- Wetter, L. R.** See **Youngs, C. G.**, 398.
- Wettermark, G., Borglund, E., and Brodin, S. E.** Regenerating system for studies of phosphoryl transfer from adenosine triphosphate, 2662.
- Weyers, J., and Górniak, H.** Determination of gold in pharmaceutical preparations, 3240.
- Weyler, F. W.** See **Rutherford, W. M.**, 2250.
- Wharry, D. M.** See **Morris, L. J.**, 731.
- Wheals, B. B.** See **Askew, J.**, 2721, **Mitchell, T. H.**, 2218, and **Ruzicka, J. H. A.**, 1588.



- heeler, G., jun. See Butler, J. M., 2494.
- Helan, W. J. See National Research Development Corporation, 2673.
- Hitby, L. B. See Broughton, P. M. G., 2585.
- Hite, D. C. See Lester, R. L., 835.
- Hite, E. R. See Kilgore, W. W., 959.
- Hite, H. B., jun., and Powell, S. S. Isolation and analysis of trienoic and tetraenoic fatty acids in menhaden oil by complementary TLC and GLC, 3116.
- Hite, J. D. See Firsching, F. H., 1799.
- Hite, R. See Kilgore, W. W., 957.
- Hite, E. C. See Jones, I. D., 436, 2726.
- Hite, E. H. See Howard, J. W., 2170, 2734.
- Hite, W. See Mueller, R. M., 3288.
- Hitefield, R. J., and Brady, J. J. Vacuum micro-balance for operation at  $-196^{\circ}$ , 521.
- Hitehead, A. B., and Heady, H. H. Laser-spark excitation for spectrographic analysis of homogeneous powdered materials, 2820.
- Hitehead, J. See Jackson, P. F. S., 1672.
- Hitlock, L. See Venghiattis, A. A., 1116.
- Hitlock, L. S. See Ressler, N., 791.
- Hitney, G. See Brunngraber, E. G., 3139.
- Hittle, G. P. See Black, A. P., 1007.
- Hyley, G. A. See Stagg, B. H., 2109.
- Ichern, H. See Neurath, G., 356, 824.
- Idmer, H. Gas-chromatographic identification of hydrocarbons by use of retention indices, 212.
- Iedemann, H. G., and Tets, A. van. Thermo-analytical studies. XI. Curves of differential thermal analysis measurements of melting and solidification processes: calorimetric calibration of differential thermal analysis apparatus by measurements on metallic samples, 1714.
- See also Tets, A. van, 1715.
- Iegand, R. G. See Sonders, R. C., 2187.
- Iersma, L. D., and Lott, P. F. Glyoximes as reagents for the gravimetric determination of bismuth and lead, 2797.
- Iesner, E. See Československá Akademie Věd, 1621.
- Iesner, I. Separation of epoxy-resins by paper chromatography, 1976.
- Iest, W. G. Double-isotope-derivative assay for progesterone and  $20\alpha$ -hydroxypregn-4-en-3-one in tissues and biological fluids, 2053.
- Iightman, S. L. See Turner, T. D., 2072.
- Iijayanayake, R. H. See Griffiths, T. R., 475.
- Iijesequera, R. O. B. See Senanayake, U. M., 2197.
- Iilcox, M. See Ray, B. R., 818.
- Iildbrett, G. See Kiermeier, F., 390.
- Iildenhain, W., and Henseke, G. Infra-red spectrophotometric determination of hydroxyl groups in phenolic aldehydes, ketones, carboxylic acids and acrylic acids, 704.
- Iilding, P. See Rinderknecht, H., 345.
- Iildy, P. C. Electronic integration and automatic background correction applied to high-sensitivity flame photometry, 2297.
- Iiley, R. M., and Ferri, J. A. Design of an automated syringe-type smoking machine, 426.
- Iilhite, W. F., and Hollis, O. L. Use of porous-polymer beads for analysis of the Martian atmosphere, 2794.
- Iilke, K.-I. See Grosskreutz, W., 597.
- Iilkinson, K. L. See Maude, B. M., 2906.
- Iilks, R. A., jun., and Gilbert, S. G. Determination of residual solvents in packaging materials, 2165.
- Iilleboordse, F. See Brydia, L. E., 1941.
- Iillhalm, B. See Flament, I., 1564.
- Williams, A. I. Extraction and determination of disodium octaborate preservative in *Picea sitchensis*, 2565.
- Williams, C. H., and Twine, J. R. Automated determination of nitrogen, sulphur, phosphorus, potassium, sodium, calcium and magnesium in plant material, 796.
- Williams, David Rowland. See Roach, A. G., 2212.
- Williams, David Royston. See Baker, C. A., 1186.
- Williams, H. See Monekosso, G. L., 2001.
- Williams, H. P., Overfield, C. V., and Winefordner, J. D. Simple device for sampling gases without air contamination, 440.
- and Winefordner, J. D. High-sensitivity radio-frequency detectors for gas-chromatographic permanent-gas analysis, 2275.
- Williams, I. H. Cleaning of the nickel-63 electron-capture detector, 2273.
- Williams, J. P. See Maxwell, M. A. B., 831.
- Williams, M. See Briscoe, G. B., 1791.
- Williams, M. J. See Robson, A., 1382.
- Williams, W. T. See McLaren, K. G., 1618.
- Williams, X. K. See West, T. S., 2359.
- Willis, D. E., and Engelbrecht, R. M. GLC of  $C_1$  to  $C_{10}$  hydrocarbons by open-tubular columns with on-column injection, 213. Application of on-column injection to open-tubular columns: instrument modification for on-column injection, 1059.
- Willis, H. H. See Cuninghame, J. G., 26.
- Willmott, F. W. See Littlewood, A. B., 1067.
- Wilson, A. L. Solvent-extraction absorptiometric method for determining nickel in boiler-feed water, 3282.
- Wilson, D. W. See Cartwright, P. F. S., 541.
- Wilson, H. N., and Duff, G. M. S. Industrial gas analysis: review, 1111.
- Wilson, J. N., Franks, M. C., and Sherlock, D. R. Separation of dieltrin from pentachlorophenol, 1585.
- Wilson, K. W., and Crutchfield, C. A. Spectrophotometric determination of limonin in orange juice, 2728.
- Wilson, W. See Smith, R. S., 1027.
- Wilson, W. D. C. See Caddy, B., 1504.
- Windsor, M. L. See Pecsok, R. L., 2271.
- Winefordner, J. D., Cetorelli, J. J., and McCarthy, W. J. Estimation of minimum detectable sample concentrations obtained with near and middle i.r. detectors for i.r. absorption spectrophotometry, 3334.
- and Overfield, C. V. Estimation of limits of detection for the flame-emission gas-chromatographic detector, 1072.
- See also Bratzel, M. P., jun., 472, 583, Mansfield, J. M., 3325, Overfield, C. V., 553, Parsons, M. L., 1805, St. John, P. A., 1099, and Williams, H. P., 440, 2275.
- Wing, R. E., Collins, C. L., and Bemiller, J. N. TLC of substituted glycosides, 1923.
- Winkel, R. G. See Hunt, J. L., 2304.
- Winowski, Z. Separation of cations of analytical groups 4 and 5 on anionites. I. Separation of calcium from magnesium, 579.
- Winter, E. Dimethyl phthalate as 'transparency liquid' for electrophoresis, 1650.
- Winterlin, W. See Kilgore, W. W., 957.
- Wipf, H.-K. See Clerc, J. T., 488.
- Wirsig, M., Rössner, E., and Krysmann, W. Purification of potassium chloride for electrochemical purposes and the determination of traces of platinum in aqueous potassium chloride solution, 565.
- Wirth, M. M. See Primavesi, G. R., 1056.

- Wise, J. K., and Smith, C. D. Infra-red spectrometric examination of paper. II. Determination of urea - formaldehyde resin, 1380.  
— See also Smith, C. D., 1380.
- Wiseman, W. A. Improved detection systems for gas chromatography, 1070.
- Wisniewski, J. V. Rapid GLC determination of diphenylamine in phenothiazine, 3231.
- Wisniewski, W., and Kindlik, T. Determination of procainamide, 3221.
- With, T. K. TLC of free porphyrins on talc, 2091.
- Witherell, C. See Vestergaard, P., 1629.
- Withington, D. F. Determination of butter fat in margarine fat by trans-esterification and GLC, 948.
- Witte, K., and Dissinger, O. Collection of gas-chromatographic micro-fractions, 3.  
— and Raske, H. Gas-chromatographic analysis of free aromatic mono- and di-carboxylic acids, 2537.
- Witting, L. A., Krishnan, R. S., Sakr, A. H., and Horwitt, M. K. Determination of brain gangliosides of several species by TLC, 2626.
- Wódkiewicz, L., and Dybczyński, R. Anion-exchange behaviour of the rare-earth-metal complexes with *trans*-CDTA, 2400.
- Woerner, R. See Balabanoff, L., 137.
- Woggon, H., and Jehle, D. Testing of plastic materials used in the food-packaging industry: identification of antioxidants and u.v.-radiation-absorbent materials in plastics, 2705.
- Wójtowicz, M., and Kubica, M. Spectrophotometric determination of boron in Nimonic alloys, 3035.
- Wolf, E. See Gagliardi, E., 2210.
- Wolf, F., Losse, A., and Franke, K. Gas-chromatographic separation of compounds of high boiling-point, 214.  
— See also Mohr, K.-H., 1345.
- Wolf, G. See Righetti, P., 2675.
- Wolf, J. P. Physico-chemical methods for the analysis of fats, 2732.
- Wölfe, R., Herpers, U., and Herr, W. Improved selective  $\gamma,\gamma$ -coincidence arrangement for the non-destructive determination of sub-micro traces of copper in high-purity beryllium, bismuth, lead, selenium, tin and thallium, 1148.
- Wollenweber, P. Circular and radial techniques in TLC, 2.
- Wolowelsky, J. See Gressel, J., 2807.
- Wolski, T. See Soczewiński, E., 626.
- Wong, J. T. See Hastings, P., 2100.
- Wong, K. P., and Sourkes, T. L. Determination of uridine diphosphate glucose and uridine diphosphate glucuronic acid in tissue, 1478.
- Won Sick Woo. Determination of 4-methoxycinnamate and its metabolite in rabbit serum, 2012.
- Woo, W. S. See Won Sick Woo.
- Wood, A. J. See Weldrick, G. J., 610.
- Wood, G. E. See Fritz, J. S., 1907.
- Wood, R. GLC of long-chain fatty alcohols, 3060.
- Wood, T., and Abrahams, D. E. Reagent for the detection of ketopentoses and ketopentose phosphates on chromatograms, 2026.
- Woodhouse, J. M. See Robson, A., 1382.
- Woods, K. R., and Wang, K.-T. Separation of 5-dimethylaminonaphthalene-1-sulphonyl derivatives of amino-acids by polyamide-layer chromatography, 1454.
- Woodward, J. D. See Ault, R. G., 971.
- Woolley, D. E. See Page, F. M., 2272.
- Woolston, J. R., Honig, R. E., and Botnick, E. M. Response of ion-sensitive plates as a function of ion energy, 1673.  
— See also Honig, R. E., 1674.
- Wopshall, R. H., and Shain, I. Effects of adsorption of electro-active species in stationary electrode polarography, 500.
- Worthington, J. M. See Malanoski, A. J., 2175.
- Wright, C. M., Orr, A. A., and Balling, W. Spectrophotometric determination of nitric oxide in dinitrogen tetroxide, 1829.
- Wright, F. C., Gilbert, B. N., and Riner, J. C. GLC determination of *OOO'O'*-tetramethyl *OO'*-(thiod-*p*-phenylene)diphosphorothioate residues in water, 1015.
- Wright, G. F. See Hutzul, M. G., 2785.
- Wronski, M. Micro-determination of zinc, cobalt and copper with oxine blue, 550. Sub-micro-determination of mercapto-groups and cystine in wool with dithiofluorescein and *o*-hydroxymercuribenzoic acid, 2566. Identification of thiols by means of mercurated fluorescein, 3077. Contribution to the determination and identification of 'substance X' in serum, 3123. Identification of aminothiols based on their rates of reaction with formaldehyde, 3173.  
— and Goworek, W. Determination of cystine in wool and hair by the hydrogen iodide and standard tungstophosphoric acid methods, 3172.
- Wullen, H., and Thielemans, H. Analysis of pharmaceutical preparations based on oxyphenisatin diacetate and phenolphthalein: determination of diphesatin after chromatographic separation, 2161.
- Wurziger, J., and Hensel, G. Use of cholesterol content of fish fillet for characterising the species of the fish, 2712.
- Wydeven, T., and Leban, M. Heated i.r. cell for investigation of solids in a controlled atmosphere, 480.
- Wyler, O. Use of gas and thin-layer chromatography for testing the authenticity of spice extracts and similar materials, 1095.
- Wynne-Jones, W. F. K. See Lownd, D. A., 1698.
- Wysocka, B., and Bronisz, H. Detection of lead, thallium and arsenic in biological material by TLC, 1405.
- Wytenbach, A., Parthe, P., and Martin, E. Determination of arsenic in the hair in a case of acute lethal arsenic poisoning, 291.

## Y

- Yaalon, D. H. See Barzily, I., 1151, 1197.
- Yagodin, G. A. See Vladimirova, L. M., 2962.
- Yakimets, E. M. See Kuz'menko, N. I., 2895.
- Yakobi, N. M. See Vul'ison, E. K., 3370.
- Yakobson, L. M. See Astanina, L. N., 1414.
- Yakovenko, E. I. See Zolotivskaya, E. S., 1136.
- Yakovlev, P. Ya. See Busev, A. I., 4, 2380.
- Yakovleva, M. Ya. Fractionation of urinary oxosteroids, 2634.
- Yakovitz, H., and Heinrich, K. F. J. Quantitative electron-probe micro-analysis: absorption correction uncertainty, 2288.
- Yakubchik, A. I. See Kirpichev, V. P., 274.
- Yalcindag, O. N., and Onur, E. Differentiation between Perparin and papaverine hydrochloride: determination of Perparin in a non-aqueous medium, 3195.
- Yamada, M. See Takeuchi, T., 1227.
- Yamada, T. See Imura, S., 1609.



- amaguchi, H., Iwasaki, K., Yamaguchi, Kōichi, and Ueno, Keihei. Use of masking agents in chelatometric titration. V. Masking properties of thio-ethers, and a comparison with masking abilities of various thiol derivatives, 16.
- amaguchi, Katsumasa. See Kajiyama, R., 155.
- amaguchi, Kōichi. See Yamaguchi, Hiroko, 16.
- amaguchi, N. See Kammori, Ō., 670, 1734.
- amaguchi, T. See Yotsuyanagi, T., 1013.
- amaleev, I. Ya., and Pal'yanova, M. V. Determination of OOS-trimethyl phosphorodithioate in dimethyl phosphorodithioate, 738.
- amamoto, O., Hayamizu, K., Someno, K., Nishikawa, T., and Kaise, M. [Annual review, 1967]—Analysis by magnetic resonance, 1734.
- amamoto, Yoshikazu. See Ueda, A., 1283, and Ueda, K., 1857.
- amamoto, Yuroku, Kikuchi, S., Hayashi, Y., and Kumamaru, T. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXI. Determination of mercury<sup>II</sup> with 2,2'-bipyridyl-iron<sup>II</sup>, 66.
- Kumamaru, T., Hayashi, Y., and Nobori, Y. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXVII. Determination of dehydroacetic acid, 1551.
- Kumamaru, T., Hayashi, Y., and Yamate, M. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXVI. Determination of pentachlorophenol with tris-1,10-phenanthroline-iron<sup>II</sup>, 240.
- Kumamaru, T., Hayashi, Y., Yamate, M., Kobayashi, T., and Tanaka, R. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXX. Determination of saccharin sodium with the tris-1,10-phenanthroline-iron<sup>II</sup> chelate, 1551.
- Kumamaru, T., Tsubouchi, M., and Okimura, I. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXII. Determination of salicylic acid with 4,7-diphenyl-1,10-phenanthroline-iron<sup>II</sup>, 244.
- Okamoto, N., and Tao, E. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXIV. Indirect extraction-spectrophotometry of potassium with 2,2'-biquinoly-1-copper<sup>I</sup> tetraphenylborate, 43.
- Tsubouchi, M., and Okimura, I. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXV. Determination of gold<sup>III</sup> with tris-1,10-phenanthroline-iron<sup>II</sup>, 52.
- Tsubouchi, M., Okimura, I., and Takagi, T. Spectrophotometric determination of anions by solvent extraction with metal-chelate cations. XXIII. Determination of platinum<sup>IV</sup> with tris-1,10-phenanthroline-iron<sup>II</sup>, 175.
- See also Tōei, K., 1734.
- amamura, Y. See Takahashi, Y., 343.
- amanouchi, K. See Nambara, T., 1443.
- amaoka, H. Simple a.c. polarography attachment to a conventional d.c. polarograph, 497.
- amashoji, Y. See Shono, T., 778.
- amate, M. See Yamamoto, Yuroku, 240, 1551.
- amazaki, S. See Sato, Katsuya, 578.
- ampol'skii, M. Z. See Salikhov, V. D., 1797.
- anchevskii, V. A. See Zarinskii, V. A., 1696.
- anitskii, V. K. See Rigin, V. I., 615.
- ankov, L. Apparatus for preparative column chromatography, 428.
- ankus, C. A. See Bellin, J. S., 636.
- ano, K. See Iritani, N., 1532.
- Yanovskii, M. I. See Berman, A. D., 3311.
- phosphopyruvate carboxylase activity, 2124.
- Yariv, S., Birnie, A. C., Farmer, V. C., and Mitchell, B. D. Interactions between organic substances and inorganic diluents in differential thermal analysis, 523.
- Yaroshenko, G. F. See Temkina, V. Ya., 12.
- Yarovenko, A. N. See Kreshkov, A. P., 98.
- Yates, R. L. See Wenninger, J. A., 1371, 1372.
- Yecheskel, E. See Sulitzanu, D., 458.
- Yeung, D., and Oliver, I. T. Assay of phosphopyruvate carboxylase activity, 2124.
- Yip, G., and Howard, S. F. Extraction and clean-up procedure for GLC of four dinitrophenolic pesticides, 2192.
- Yip, T. C., and Carr, R. L., jun. Continuous chlorine-residual measurement, 3283.
- Yoichi, Y., and Sano, A. Colorimetric determination, with chromotropic acid, of nescapine in mixed pharmaceutical preparations, 351.
- Yokoyama, T. See Ito, Mitsuo [Tokyo, Japan], 250.
- Yoneda, H. Paper chromatography of inert cobalt<sup>III</sup> complexes, 162.
- Baba, T., and Muto, M. Adsorptive power of alumina towards inert cobalt<sup>III</sup> complexes in TLC, 163.
- Yoshida, H. See Hikime, S., 1880.
- Yoshimori, T., and Hikawa, I. Purity testing of standard reagents by coulometric titration, 10.
- Yoshimura, C., Hara, H., and Hara, T. Liquid amalgam method in non-aqueous solvents. I. Determination of titanium<sup>IV</sup>, iron<sup>III</sup> and tin<sup>IV</sup> with antimony pentachloride, 36.
- Yoshino, T. See Murakami, M., 536.
- Yotsuyanagi, T., Goto, K., and Nagayama, M. Spectrophotometry of aluminium with tiron and its use for the analysis of aquahydroxoaluminium complexes in water, 1794.
- Yamaguchi, T., Goto, K., and Nagayama, M. Consecutive chelatometric titration of the sum of calcium and magnesium, manganese and zinc in acid mine-drainage water, 1013.
- Youden, W. J. Role of statistics in regulatory work, 6.
- Young, R. A. See Johnson, G. V., 2461.
- Young, R. S. Use of an i.r. radiation pyrometer, 1723.
- Young, W. A. P., and Gooding, B. W. J. Data handling and instrumentation with the A.W.R.E. mass spectrometers, 2849.
- Youngs, C. G., and Wetter, L. R. Micro-determination of the major individual isothiocyanates and 5-vinylloxazolidine-2-thione obtained from thioglucosides in rapeseed, 398.
- Yudelevich, I. G. See Malakhov, V. V., 2955, and Prokhorova, S. A., 2976.
- Yule, H. P. Instrumental reactor neutron-activation analysis studies on seventy-two elements in a refined hydrocarbon, 758.
- Yushchenko, A. S. See Iofa, B. Z., 647.
- Yustus, Z. L. See Vasil'eva, L. N., 1210, 1852.

## Z

- Zadvornova, E. G. See Ostanina, N. M., 1191.
- Zagar, J. B. See Ascione, P. P., 355.
- Zaidi, S. S. H. See Khan, Mohammad A., 2501.
- Zaino, E. C. Plasma iron and iron-binding capacity determinations by atomic-absorption spectrophotometry, 2007.
- Zaitsev, P. M. See Shuster, Ya. A., 3070.
- Zaitsev, V. M. See Kirin, I. S., 2998.
- Zaitseva, A. I. See Lavrukina, A. K., 2429.
- Zak, B. See Baginski, E. S., 913.

- Zakhariya, N. F., Karpenko, L. I., and Fadeeva, L. A. Visual-spectrographic determination of rare-earth metals in solutions, 1173.
- Nazarova, T. F., Shchegol'kov, S. V., Grechanovskii, V. P., Turulina, O. P., and Gordeeva, A. N. Concentration and determination of the impurities in some materials particularly germanium used in the semiconductor industry, 2413.
- See also Izmailova, D. N., 2395.
- Zakharov, M. S., and Trushina, L. F. Determination of traces of zinc, lead, cadmium and copper in high-purity nitric acid by anodic-stripping voltammetry with a mercury-film electrode, 2426.
- Trushina, L. F., and Baletskaya, L. G. Determination of traces of elements in high-purity materials by anodic-stripping voltammetry, 2336.
- Zakharov, V. K. See Bazhov, A. S., 2819.
- Zamanov, R. Kh., and Rafikova, R. Sh. Determination of fluorine in natural water without preliminary distillation, 1601.
- Zambonin, P. G., and Jordan, J. Voltammetry of peroxide and superoxide in fused salts, 115.
- Zamfir, J., and Szabó, M. Analysis of mixtures of anions of sulphur labelled with sulphur-35, 2992.
- Zamochnik, S. B. See Rechnitz, G. A., 118.
- Zamojski, A. See Banaszek, A., 3209.
- Zanella, P. See Tagliavini, G., 1935.
- Zangen, M., Marcus, Y., and Bergmann, E. D. Products of the reaction between alcohols and phosphorus pentoxide. II. Chromatographic separation of the products, 3059.
- Zappi, E. Application of the Prussian blue reaction for the detection of thyroid hormones and iodinated derivatives to TLC, 872. Group separation of an aqueous solution of some iodinated amino-acids and their de-aminated derivatives by solvent extraction, 873.
- Zappia, V. See Salvatore, F., 349.
- Zarebski, J. See Kowalski, Z., 693, 3045.
- Zarembo, J. E. See Eisdorfer, I. B., 2676, and Warren, R. J., 814, 1487.
- Zarilla, R. F. Instrumentation of analysis by high-frequency techniques for measurement of capacitance or conductance, 3340.
- Zarinskii, V. A., Ryabukhin, V. A., Karlova, E. V., Volkov, A. F., Yanchevskii, V. A., and Chernov, V. K. Applications of a semi-automatic recording high-frequency titrator, 1696.
- Zatko, D. A. See Kratochvil, B., 2539.
- Zavarov, G. V. Potentiometric determination of cyanuric acid, 1974.
- Zaveler, S. A. See Krichevsky, M. I., 3351.
- Zawta, B. See Freimuth, U., 312.
- Zbytek, P. See Škarvada, A., 3090.
- Zdrojewski, A. See Dubois, L., 2224.
- Zee, K. T. See Cummings, J. G., 1255.
- Zeeuw, R. A. de. Role of the solvent vapour in TLC, 2259. Influence of humidity variations in the TLC of hypnotics, 2. Reproducibility of  $R_F$  values in unsaturated chambers and related development techniques, 2.
- Zelyukova, Yu. V. See Poluéktov, N. S., 82.
- Zemanová, D., and Novák, J. Determination of bismuth in copper and tetrahedrite concentrates, 2357.
- Zentai, P. Spectrochemical methods for geochemical purposes, 1287.
- Zeszutko, W. See Janik, B., 1780.
- Zetlmeisl, M. J., and Haworth, D. T. TLC separation of some inorganic cations, 21.
- Zhamagortsyan, V. N. See Vartanyan, S. A., 1353.
- Zhantalai, B. P., and Sukhareva, Z. I. Spectrophotometric determination of ammonium ions and methylamines in rectified methanol, 1933.
- Zharikova, V. K. See Fedorova, N. D., 1757.
- Zharovskii, F. G., and Ryzhenko, V. L. Solubility of some 8-hydroxyquinolines in organic solvents: determination of aluminium after separation from iron, 2382.
- Vyazovskaya, L. M., and Kostova, R. V. Extraction of metals with tributyl phosphate as their sulphate complexes, 2857.
- Zhdanov, A. K., Akent'eva, N. A., and Kapit' N. V. Successive amperometric titration of mixtures of cations containing thallium, copper and silver, 1123. Successive amperometric titration of thallium, cadmium and silver in admixture, 1754.
- Zhdanova, T. G., Baranova, V. G., and Borisov, L. M. Spectrographic analysis of a calcium nickel - phosphate catalyst, 1759.
- Zhigalkina, T. S. See Aleksandrovich-Mel'nikov, A. S., 1774.
- Zhiglinskii, A. G. See Aleksandrak, V. M., 1670.
- Zhivopistsev, V. P., Petrov, B. I., Selezneva, E. A., and Sibiriyakov, N. F. Determination of impurities in high-purity aluminium by using diantipyrylmethane, 2385.
- and Pyatotsin, L. P. Selective determination of thorium with 1,1-diantipyrylmethane, 1178.
- Zhuikova, L. K. See Khovyakova, R. F., 2964.
- Zhukhovitskii, A. A. See Bodrina, D. E., 2344.
- Zhuravleva, I. L. See Golovnya, R. V., 229, 1541.
- Zidek, K. See Kainz, G., 1901, 1909, 1910.
- Ziegler, E., and Hoffmann, E. G. Advances in Raman spectroscopy, 468.
- Zielen, A. J. Precision standardisation of cerium sulphate solutions, 1739.
- Zieliński, W. See Troszkiewicz, C., 3089.
- Zielinski, W. L., jun., Fishbein, L., and Martin, L., jun. Relationship of structure to sensitivity in electron-capture GLC analyses for pesticides, 996.
- Fishbein, L., and Thomas, R. O. Effluent splitter for measurement of electron capture flame ionisation response ratios, 444.
- See also Fishbein, L., 749.
- Ziamba, S. Polarographic determination of rhenium in industrial materials, 570.
- Zijlstra, W. G. See Assendelft, O. W. van, 333.
- Zil'bershtein, Kh. I., and Semov, M. P. Spectrochemical determination of impurities in specially purified silica, 2944.
- Zilva, J. F. See Howorth, P. J. N., 2638.
- Zimina, G. M. See Korenman, I. M., 2852.
- Zimina, K. I. See Polyakova, A. A., 1953.
- Zimmer, M. See Guibault, G. G., 2113.
- Zimmerli, F. H. Automatic titrator for alkyl resin acid-value analysis, 1978.
- Zimmermann, Heinz, and Kolbig, C. Determination of the hydroxyl-group content of poly(ethylene terephthalate) by reaction with *o*-sulphobenzoic acid anhydride, 1388.
- and Tryonadt, A. Determination of hydroxy end-groups in poly(ethylene terephthalate) with 3,5-dinitrobenzoyl chloride, 273.
- Zimmermann, Horst. See Remmers, V., 3150.
- Zimmermann, K. See Dickens, P., 666.
- Zimmermann, R. Evaluation of milling products by colour, 371.
- Zimnukhov, V. V. Isolation, detection and determination of proserine in cadaver material, 3182.
- Zinchenko, V. A., and Gertseva, N. M. Determination of sulphur compounds in titanium<sup>IV</sup> chloride, 1825.
- Zingales, I. Systematic identification of psychotropic drugs by TLC, 1517.



- Nov'ev, A. I.** Determination of temporary and total hardness on a single sample of water, 3272.
- Polowski, Z., and Jasna, B.** X-ray spectrometric determination of iron, calcium oxide and silica in iron ores by the internal standard method and by a fusion method, 662.
- Pilivan, E. M.** See **Blatt, W. F.**, 877, 2247.
- Šitová-Němcová, H.** See **Litomiský, J.**, 612.
- Tittel, H. E., and Florence, T. M.** Voltammetric determination of fluoride, 1862.
- and Scroggie, L. E.** Effects of  $\gamma$ -radiation on spectrophotometric determination of uranium as thiocyanate, 2932.
- Latkis, A.** See **Simmonds, P. G.**, 445.
- Locchi, F.** Gas-chromatographic analysis of hydrocarbons in methane in the parts-per-billion range, 2502.
- Rollinger, H.** See **Ramanathan, S.**, 3102.
- Polotavin, V. L.** See **Fedorova, N. D.**, 1757.
- Polotov, Yu. A., and Bagreev, V. V.** Extraction-photometric determination of magnesium with Eriochrome black T, 2892.
- and Kuz'min, N. M.** Use of solvent extraction in emission and atomic-absorption flame photometry: direct spraying of the extracts into the flame, 469.
- Zolotovitskaya, É. S.** Effect of the results of blank experiments on the spectrographic determination of traces of impurities in salts and single crystals: determination of calcium and magnesium in sodium and caesium iodides, 1136.
- Zolotukhin, V. P., and Lolomova, N. S.** Ion-exchange chromatographic separation of beryllium from indium, gallium or zirconium by means of salts of some organic oxy-acids, 2366.
- Zolty, S., and Prager, M. J.** Detection of subparts-per-million quantities of chlorine trifluoride in air by electron-capture GLC, 410.
- Zorin, A. D.** See **Devyatýkh, G. G.**, 613.
- Zugrăvescu, M. A.** See **Zugrăvescu, P. G.**, 383.
- Zugrăvescu, P. G., and Zugrăvescu, M. A.** Determination of sulphur dioxide, 383.
- Zunzunegui Pérez, M.** See **Bermejo Martínez, F.**, 1830.
- Żurawski, P., Schmidt, Krystyna, and Adamczewski, B.** Determination of phenobarbitone in prolonged-action Bellerget tablets, 3215.
- Zürcher, H.** See **Pataki, G.**, 2.
- Zvenigorodskii, Yu. S.** See **Bessonov, V. A.**, 2783.
- Zvěřina, V., Diviš, J., Marhold, J., and Matka, M.** Paper chromatography of *o*- and *m*-substituted derivatives of 1-aryl-3,3-dimethyltriazens, 1962.
- Zweig, G.** See **Sherma, J.**, 1465, 1466.
- Zýka, J.** See **Blanický, P.**, 658, and **Tolar, V.**, 145.

## INDEX TO SUBJECTS

Organic compounds are indexed under the parent compounds, except under the headings **Indicators** and **Reagents, organic**, and in the lists of reagents under specific elements. Esters are indexed under the acid constituents. References to **Cosmetics**, **Dyes**, **Enzymes** and minor items of **Laboratory apparatus** will be found under these headings. Patents are indicated by P and conference papers (titles only) by C following the abstract number.

## A

- AH<sub>3</sub>**. (See *Triethylamine*, 2-(2-benzylphenoxy)-, hydrochloride.)
- ATP**. (See *Adenosine*, 5'-triphosphate.)
- Abate**, detmn., in natural water, by solvent extraction and GLC, 1015.
- Acetaldehyde**, detmn. of formaldehyde in, by GLC, 1327.  
of CH<sub>4</sub>, H and C<sub>2</sub>H<sub>6</sub> in pyrolysis products of, by GLC, 222.
- Acetanilide**, 4'-t-butoxy-, detmn., in urine, by GLC, 2013.  
sepn. from 4'-(1-hydroxy-2-methylprop-2-yl-oxy)acetanilide and 4-acetamidophenol, by TLC, 2013.
- , **2-hydroxyimino-**, deriv. of, applications of, as reagents, 534.
- , **4'-(1-hydroxy-2-methyl-2-propoxy)-**, detmn., in urine, by GLC, 2013.
- Acetic acid**, detection, ultramicro-, 1927.  
sepn. from formic acid, paper chrom., 227.
- , **bis(4-hydroxycoumarin-3-yl)-**, ethyl ester. (See *Ethyl biscoumate*.)
- , **4-chloro-2-methylphenoxy-**. (See *MCPA*.)
- , **2,4-dichlorophenoxy-**. (See 2,4-D.)
- , **3,4-dihydroxyphenyl-**, detmn., in urine, simult. with 3,4-dihydroxymandelic acid, 3157.
- , **2,2'-dithiodi-**, detmn., in hair prepn., volum., 770.
- , **5-hydroxyindol-3-yl-**, detmn., in urine, spectroph., 861.
- , **4-hydroxy-3-methoxyphenyl-**, detmn., in urine, paper chrom. - spectrofluorim., 3141.
- , **4-hydroxyphenyl-**, detmn., in urine, in presence of related phenolic acids, colorim., 2620.
- , **mercapto-**, detmn., coulom., 3073.  
in hair prepn., volum., 770.
- , **trichloro-**, detmn., in mixtures with chloral hydrate, trichloroethanol and urochloral acid, spectroph., 298.
- , **trifluoro-**, sepn. from pentafluoropropionic and heptafluorobutyric acids, by TLC, 3068.
- Acetohexamide**, detection, in urine, by TLC, 1422.
- Acetoin**. (See *Butan-2-one*, 3-hydroxy-.)
- Acetone**, detmn., in acetonised monoglycerides, volum., 1926.  
impurity resembling a tocopherol detected in reagent-grade of, 838.  
sepn. from C<sub>1</sub> to C<sub>7</sub> alcohols and biacetyl, in fermentation media, gas chrom., 820.
- , **hexafluoroacetyl-**, metal chelates of, GLC of, 236.
- , **thio-2-thenoyltrifluoro-**, use of, as reagent, 7.
- Acetophenetidin**. (See *Phenacetin*.)
- Acetophenone**, detmn., in industrial wastes, u.v. spectroph., 1611.
- Acetylene, vinyl-**. (See *But-1-ene-3-yne*.)
- Acetylsulphafurazole**, detmn., in oral suspensions, X-ray diffractom., 2699.
- Acrylamide**, simult. with fumaric and maleic acids, polarogr., 2574.
- Acrylonitrile**, analysis, by GLC, 232.  
detmn. of acetonitrile in, by GLC, 1934.
- Acyl chlorides**. (See under *Carboxylic acids*.)
- Adamantane**, alkyl deriv. of, identn., i.r. spectroph., 2542.
- Adenosine**, 3',5'-phosphate, detmn., in biol. tissues ion-exchange chrom. - radiom., 898.  
pyrophosphate, detmn., in pharm. prep. enzymic - radiom., 2146.  
5'-triphosphate, detmn., by luciferase, apparatus for, 1477.  
of ADP in, paper chrom. - radiom., 2661.  
study of phosphoryl transfer from, fluorim., 2662.
- Adhesives**, polysulphide, detmn. of Mn in, by neutron activation, 779.
- Adipic acid**, detmn., by GLC, 1930.
- Adrenaline**. (See also *Catecholamines*.)  
detmn., fluorim., 2641.  
in urine, simult. with noradrenaline and dopamine, review of methods for, 3157.  
sepn. from noradrenaline, by GLC of trimethyl silyl deriv., 315.  
in biol. materials, glass-fibre paper chrom., 856.
- Aerosols**. (See also *Particle size analysis*.)  
analysis, sampling device for, 3190.  
continuous monitoring of, over the 0.001 to 10  $\mu$ m range, 3375.  
detmn. of Pb, As and Zn in, spectrogr., 1593.  
of propellants in, by GLC, 790.  
fractional pptn. of, modified 'conifuge' model for, 1732.  
oil-droplet, measurement of size distribution of, 3376.  
particle analyser for, flame-ionisation puls instrument for, 1592.  
spectrothermal emission, 3374.
- Aflatoxins**, analysis, review of publications Jan 1964 to Mar. 1967, 1435.
- B<sub>1</sub>**, detmn., in groundnut meal, by TLC, 2180.
- B and G**, detection, in groundnut products, by TLC, 2182.
- detmn., column - thin-layer chrom., 2183.  
in groundnut products, column - thin-layer chrom., collaborative study of, 2181.  
standard soln. for, 309.
- G<sub>1</sub>**, purification of, by TLC, use of antioxidants and EDTA in, 1437.  
sepn. of B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub>, by TLC, 1436.  
TLC of, spotting solvent for, 2036.
- Air**. (See also *Dust*, atmospheric.)  
detection of ClF<sub>3</sub> in, by GLC, 410.  
detmn. of aromatic hydrocarbons in, by GLC, 412.  
by solvent extraction - spectroph., 1001.  
of As, Pb and Zn aerosols in, spectrogr., 1593.  
of benzo[a]pyrene in, spectrofluorim., 2224.  
of formaldehyde in, spectroph., 2752.  
of glycerol trinitrate in, by GLC, 411.  
of Hg in, spectroph., 2751.  
of naphthalene in, colorim., 1002.  
of O<sub>3</sub> in, by ozonolysis of polystyrene, 2223.  
of PH<sub>3</sub> in, detector tube for, 1594.  
of SO<sub>2</sub> in, spectroph., 1595.



- ir**, determination—*continued*  
 of tetraethyl lead in, by GLC, 3271.  
 of  $\text{H}_2\text{O}$  in, by solar radiation absorption, 483.  
 of xylene in, absorption, 1597.  
 identn. of contaminants in, micro-wave spectrom., 2242.  
 monitoring of  $^3\text{H}_2\text{O}$  in, system for, 1591.  
 sampling apparatus for, 2221P.  
 sepn. of  $\text{C}_1$  to  $\text{C}_8$  hydrocarbons in, column chrom., automated, dual columns in, 2222.  
 of polycyclic N-heterocyclic compounds in, by TLC, 1005.  
**malicine**, detmn., in pharm. prep., by solvent extraction - spectroph. or fluorim., 3202.  
**maline**, detmn., in biol. fluids, as complex with bromocresol, spectroph., 295.  
**lanine, N-leucyl**, sepn. of diastereoisomers of, ion-exchange chrom., 3174.  
**N-lysyl**, detmn., in wool, spectroph, automated, 1382.  
**2-methyl**, detmn., in mixtures with natural amino-acids, ion-exchange chrom. - colorim., 2079.  
**bumin**, isolation from blood serum, by use of trichloroacetic acid and ethanol, 2087.  
**alcohols**. (See also *Sugar alcohols; Terpene alcohols*.)  
 aliphatic,  $\text{C}_1$  to  $\text{C}_8$ , sepn. from acetone and bi-acetyl, in fermentation media, gas chrom., 820.  
 $\text{C}_8$  to  $\text{C}_{22}$ , identn., by TLC, 1954.  
 long-chain, analysis, by GLC, 3060.  
 gel-permeation chromatography of, 1316.  
 nitration of, study of, 1314.  
 polyhydric, GLC of, 3061.  
 effect of tubing material on, 717.  
 sepn., by GLC, 217.  
 in cosmetics, by GLC, 1373.  
 ion-exchange chrom., as esters with optically active mandelic and lactic acids, 3071.  
**dehydes**. (See also *Carbonyl compounds*.)  
 aliphatic, dimethyl acetals of, sepn. of products of GLC of, by TLC or GLC, 715.  
 detmn., in presence of ketones, polarogr., 2515.  
 spectrofluorim., 1924.  
 spectroph., as 2,4-dinitrophenylhydrazones, 722.  
 sepn., by TLC, as 2,4-dinitrophenylhydrazones, effect of initial solvent on, 1054.  
**dicarb**, detmn., in citrus fruits, column chrom. - spectroph., 1562.  
**diosterone**, detmn. in blood plasma, by TLC and double-isotope derivative assay, 843.  
 in urine, paper - gas chrom., 1446.  
 sepn. from other corticosteroids, paper electroph., 844.  
**ldrin**, detmn., in fatty oils, by extractive distillation and GLC, 1561.  
 by GLC, after clean-up on alumina column, 2196.  
 in rice, in presence of DDT and malathion, by GLC, 960.  
 in vegetables, by GLC, after oxidation to dieldrin, 2194.  
 metabolite of, structural analysis of, based on mass, i.r. and Raman spectra, 2023.  
 sepn. from BHC and related organochlorine pesticides, by GLC, 2217.  
**alkali metals**, detmn., in biol. tissues, flame photom., 284.  
 non-aq. volum., 558, 1768.  
 of C in, by low-temp. ignition, 40.  
 sepn., by TLC, 1769.  
 from alkaline-earth and other elements, ion-exchange chrom., 1772.  
**Alkali metals**, separation—*continued*  
 of Cs, K and Rb, by ion exchange, 1770.  
 on ion-exchange paper, 1771.  
 thin-layer electrophoresis of, on salts of heteropoly-acids, 1139.  
**Alkali-metals, sulphides of**, detection of polysulphide in, spot test for, 1126.  
**Alkaline-earth metals**, analysis of quaternary mixtures of, volum., 549.  
 detmn., in biol. tissues, complexom., 284.  
 non-aq. volum., 558, 1768.  
 paper chromatography of, 2365.  
 qual. analysis of Ba, Ca and Sr, scheme for, 576.  
 sepn., by ion exchange, 1784.  
**Alkaloids**. (See also *Organic bases*.)  
 containing methylenedioxy-groups, detection on TLC plates, 2684.  
 detmn., argentim. - coulom., 2680.  
 in pharm. products, complexom., by pptn. of metal thiocyanate complexes, 917.  
 non-aq. potentiom., 2522.  
 review, 1C.  
 identn., in syrups or sugar granules, column - thin-layer chrom., 1491.  
 methylenedioxyphenyl deriv. of, chromatography of, 2850C.  
 oxindole, TLC of, 3204, 3205.  
 phenolic, detection, on TLC plates, colour reactions for, 3194.  
 TLC of, 1494.  
**Alkanephosphonic acids**, amino-, sepn., paper chrom.,  $R_F$  values of 16 acids, 862.  
**Alkanes**. (See also *Hydrocarbons*.)  
 chlorofluoro-, sepn. of isomers, by GLC, 3056.  
 detmn. of degree of branching in, i.r. spectroph., 3055.  
 nitro-, pyrolysis-GLC of, 2525.  
**Alkanesulphonates**. (See under *Sulphonic acids*.)  
**Alkoxy-groups**, detmn., 208.  
 in organometallic compounds, 2500.  
 in phenolic ethers, by GLC, 1308.  
**Alkyl sulphates**. (See under *Sulphuric acid*.)  
**Allantoic acid**,  $\alpha$ -diketone deriv. of, colour and fluorescence reactions of, 2065.  
**Allantoin**,  $\alpha$ -diketone deriv. of, colour and fluorescence reactions of, 2065.  
**Allobarbitone**, detmn., in pharm. prep., by TLC, 1513.  
**Allopurinol**, detmn., in presence of 3-amino-pyrazole-4-carboxamide, ion-exchange chrom. - spectroph., 2702.  
**Alloys**, detmn. of trace metals in, spectroph., 1124.  
 refractory, sepn. of Mo, Nb, W and V in, 1757.  
**Allspice oil**. (See *Pimento oil*.)  
**Almond oil**, assessment of quality of, comparison of pharmacopoeial methods for, 3239.  
**Almonds**, bitter, detmn. of HCN in, volum., 2184.  
 ground, detection of adulteration by ground cashew or groundnut, 1547.  
**Aluminate**, detmn. of Al and  $\text{OH}^-$  in soln. of, potentiom., 591.  
**Aluminium**, analysis, comparison of methods for, 1792.  
 spectrogr., prepn. of briquettes for, 2381.  
 aquohydroxo-complexes of, detmn., spectroph., 1794.  
 complex with pyridine-2,6-dicarboxylic acid, study of, 2911.  
 with 2-salicylideneaminophenol, study of, 75.  
 complexes with oxalic and malonic acids, study of, by thermometric titration, 556.  
 detection, with reagents adsorbed on ion-exchange resin, 586.

**Aluminum—continued**

- detmn., atomic-fluorescence spectroph., 33.  
 flame photom., effect of org. compounds on, 73.  
 fluorim., 74.  
 comparison of reagents for, 1793.  
 gravim., study of 8-hydroxyquinoline as reagent for, 587.  
 or volum., study of 8-hydroxyquinoline method, 70.  
 in copper, spectroph., 569.  
 in Fe, Li, Mg, Mn or Ni oxides, spectroph., 590.  
 in minerals, ores or rocks, complexom., 72, 589.  
 in natural water, colorim., 1010.  
 in presence of Fe<sup>III</sup>, complexom., 2338.  
 of SiO<sub>2</sub>, atomic-absorption spectroph., 2946.  
 in wool, atomic-absorption spectroph., 268.  
 of Cr in, photom., B.S.I. method for, 2912.  
 volum., B.S.I. method for, 2912.  
 of Cu in, photom., 1143.  
 of Cu, Fe and Mn in, by solvent extraction-photom., 1162.  
 of impurities in, spectrogr., use of diantipyrylmethane in, 2385.  
 in In in, polarogr., 2384.  
 of Fe in, spectroph., 677.  
 of Mn in, photom., 1165.  
 of Ag in, anodic-stripping voltamm., 2383.  
 of Zn in, by solvent extraction, 1163.  
 polarogr., 1125.  
 fluorescent indicators for, 71.  
 pptn. of, as basic Al benzoate, 588.  
 sepn. from Fe and detmn., spectroph., 2382.  
 of other elements from, by ion exchange in HF soln., 148.  
 —, **triethyl-**, detmn., by GLC, avoidance of alkene formation during hydrolysis of, 237.  
 —, **tri-isobutyl-**, detmn. of isobutoxydi-isobutyl compound in, by GLC, 3076.  
**Aluminium, reagents for**, catechol violet, 586.  
 Chrome Azurol S, 2468.  
 Eriochrome cyanine R, 590, 1010.  
 8-hydroxyquinoline, 569.  
 lumogallion, 74, 586.  
 stilbazol, 586.  
 tiron, 1794.  
**Aluminium alloys**, analysis, comparison of methods for, 1792.  
 detmn. of Cr in, photom. or volum., B.S.I. methods for, 2912.  
 of Cu in, photom., 1161.  
 and Fe in, ring colorim., 1117.  
 and Si in, by neutron activation, 76.  
 of Fe in, spectroph., 144.  
 of La or Y in, by solvent extraction-spectroph., 1164.  
 sampling of, for analysis, 1117.  
**Aluminium nitrate**, basic, detmn. of Al and OH<sup>-</sup> in, potentiom., 591.  
**Aluminium nitride**, analysis, 1795.  
 detmn. of Al and N in, 2914.  
**Aluminium oxide**, detmn., in bauxite, complexom., 1160.  
 in iron ores and slags, spectroph., 2468.  
 of impurities in, 2913.  
**Aluminium phosphate**, detmn., in pharm. prep., complexom., 1533.  
**Aluminium salts**, detmn., in pharm. prep., complexom., 1532.  
**Aluminium silicates**, detmn. of Al in, complexom., cause of low results in, 2947.  
**Americium**, detmn., coulom., 87.  
 sepn. from Cm, by ion exchange, 1184.  
 from other fission products, by solvent extraction, 1816.

- Ametryne**, detmn., thin-layer chrom., spray reagent for, 406.  
**Amides**, detection, on paper chromatograms, 2523.  
 thio-, detmn. of acid hydrolysis rates of, by GLC, 1942.  
**Amidine**, NNN'-trifluoro-deriv. of, sepn., column chrom., 1333.  
**Amidopyrine**, detmn., in pharm. prep., polarogr., 2147.  
 potentiom. or biamperom., 357.  
 identn., by TLC, 3218.  
 paper- and TLC of decomposition products formed in aq. soln. on storage, 3216.  
**Amidoximes**, identn., 2540.  
**Amines**, aliphatic, primary and secondary, detmn., use of isopropenyl acetate as acetylating agent in, 1932.  
 volatile, identn., microscopic, 2521.  
 aromatic, detmn., spectropolarim., 247.  
 detection, paper chrom., reagents for, 1452.  
 detmn., by TLC, with use of interference refractometer, 228.  
 in pharm. prep., review of methods for, 2676.  
 non-aq. potentiom., 2522.  
 hydroxy-, sepn., by GLC of trimethylsilyl ethers of N-heptafluorobutyl deriv., 3158.  
 isolaiphatic, analysis, by GLC, 229.  
 perfluorinated, sepn., column chrom., 1333.  
 secondary, dithiocarbamates of, detmn., amperom., 3075.  
 sepn., by GLC, (as 4-nitrophenylazobenzoyl deriv.), 1096C.  
 by ion exchange, 249.  
**Amino-acids**, analysis, automated, reagent replacing ninhydrin for, 2074.  
 in presence of Fe<sup>3+</sup>, Cu<sup>2+</sup> or Ni<sup>2+</sup>, ion-exchange chrom. - spectroph., 1451.  
 basic, detmn., spectroph., use of Hg<sup>II</sup> salt as precipitant in, 322.  
 chelates with Cu<sup>II</sup>, sepn., paper electroph., dependence on pH of mobility of, 1455.  
 detection, paper chrom., reagents for, 1452.  
 detmn., automated ion-exchange chrom. - spectroph., computer program for identn. of anomalous peaks in, 3168.  
 in biol. fluids, paper chrom. - spectroph., 320.  
 in blood serum and blood plasma, automated, 2073.  
 in protein hydrolysates, enzymic - photom., continuous, 3164.  
 in urine, by TLC, 3165.  
 of D-isomer in natural, by temp.-programmed GLC, 2078.  
 paper chrom., technique for, 863.  
 standardisation of procedure and methods for testing papers, 321.  
 identn., by TLC, in presence of 50% glycerol, 865.  
 in sweat, paper chrom., 2076.  
 methyl esters of, preparative GLC of, 378.  
 phenylthiohydantoins of, identn., on TLC plates, by i.r. spectra, 2645.  
 sepn., paper chrom., 1453.  
 screening, in frozen tissue slices, by solvent extraction - paper chrom., 2077.  
 sepn., by GLC, as N-trifluoroacetyl deriv., 867.  
 by TLC, as N-benzoyloxycarbonyl deriv., 3166.  
 as dansyl deriv., 325, 868.  
 spray reagent for, 3167.  
 comparison of column and paper chrom. methods, 2C.  
 in blood serum, paper chrom., 3163.  
 in protein hydrolysates, by TLC or by TLC-electroph., 866.  
 ion-exchange chrom., automated, 2643.

- Amino-acids**, separation—*continued*  
 ion-exchange paper chrom., 2644.  
 paper chrom., solvent systems for, 2075.  
 paper and thin-layer chrom., as 5-amino-2,4-dinitrophenyl deriv., 864.  
 paper electroph. - paper chrom., and detmn., by conventional methods, 2642.  
**S-containing**, sepn., and from leucine and isoleucine, by paper and TLC, 874.  
**Amino-groups**, primary, detmn., absorbents for NO in, 1909.  
 apparatus for, 1911.  
 in amines and acid amides, 1910.  
**Aminophylline**, detmn., in compound powders, volum., 2134.  
**Amisotriptyline**, detmn., by GLC, 2695.  
 examination of breakdown products of, by TLC and GLC, 2150.  
**Ammonia**, detmn., enzymic - fluorim., 2063.  
 in blood, colorim., 2003.  
 in sea water, photom., 2765.  
 spectroph., manual or automated, 2764.  
 spectroph., interference of amino-acids and protein in, 287.  
**Ammonium compounds, quaternary**, detmn., argentim.- coulom., 2680.  
 -, alkylbenzyltrimethyl-, detmn., temp.-programmed GLC, 2156.  
 -, [2-(*N*-benzylanilino)ethyl]ethyltrimethyl-, bromide, colour tests for, 3226.  
 -, methylidiphenethyl-, chloride, colour tests for, 3226.  
 -, pentadecyl(5-carboxytrimethyl)-, bromide, identn., in eye lotions, by TLC, 2700.  
**Ammonium hexanitratocerate**. (See *Cerium(IV) ammonium nitrate*.)  
**Ammonium ions**, detmn., gravim., 1749.  
**Ammonium salts**, detmn., volum., 100.  
**Amphetamine**, detection, in urine; by TLC, 1418.  
**Amprolium**, detmn., in feeding-stuffs, by the A.O.A.C. method, treatment of alumina for, 2215.  
**Amulose**, detmn., in rice, by starch-iodine blue test, accuracy of, 2708.  
**Anaesthetics**, local, ident., microscopic, 2697, 3222.  
**Analytical chemistry**. (See also under the general headings: *Automated methods; Clinical analysis Gravimetric analysis; Pharmaceutical analysis; Qualitative analysis; Radioactivation analysis; Toxicological analysis; Volumetric analysis.*)  
 instruments for flowing systems, automatic, 1098.  
 reviews of progress, 1095C, 1110, 1734, 2326.  
 of 50 years in USSR, 4C.  
**Analytical standards**, secondary, use of nickel ammine complexes as, 1104.  
**Androstane**, deriv. of, GLC of, 1443.  
**Androst-5-ene-3 $\beta$ ,17 $\beta$ -diol, 17 $\alpha$ -methyl-**. (See *Methandriol*.)  
**Androst-4-en-3-one, 17 $\alpha$ -hydroxy-**, (*epitesterone*), detmn., in urine, simult. with testosterone, paper chrom. - spectroph., 845.  
 sepn. from testosterone, by TLC, 3150.  
<sup>3</sup>H-labelled, detmn., in blood plasma, column - thin-layer chrom. - radiom., 2056.  
**Aniline**, detmn., in mixtures with diphenylamine, potentiom., 746.  
 of 4-aminobiphenyl in, paper chrom., 248.  
 -, 2-chloro-, detmn. of impurities in, by TLC, 747.  
 -, 3-chloro-, detmn. of nitro-compounds in, by TLC, 1349.  
 -, nitro-, isomers of, TLC of, *R<sub>M</sub>* values of, 748.  
**Anions**, detmn., atomic-absorption spectroph., 2862.  
 identn., micro- and ultra-micro-, 1741.  
**o-Anisic acid, 3,6-dichloro-5-hydroxy-**, detmn., in plant tissue, by TLC - GLC, 818.  
**p-Anisic acid**. (See *Benzoic acid, 4-methoxy-*.)  
**Anisole, methyl(pent-3-en-2-yl)-**, GLC of, 1346.  
**Anisotropic methobromide**, detmn., in urine, spectroph., 2020.  
**Antazoline**, detmn., in pharm. prep., by GLC, 1520.  
**Anthracene**, laser-excited Raman spectrum of, 250.  
**Anthragallol**, applications of, as reagent, 533.  
**Anthrassic acid, 3-hydroxy-**, detmn., in urine, enzymic - spectroph., 859.  
**Anthrappurpurin**, applications of, as reagent, 533.  
**Antraquinone**, deriv. of, detmn., polarogr., 2543.  
**Antibiotics**, detmn., measurement of inhibiting zone diameters in, 3207.  
**Antihistamines**, identn., microscopic, 2697, 3222.  
**Antimonate(V)**, hexafluoro-, detmn., gravim. and spectroph., 1863.  
**Antimony**, analysis, spectrogr., with concn. of impurities by zone melting, 2976.  
 detmn., atomic-fluorescence spectroph., 105.  
 in biol. materials, in presence of As, Br, Hg and Se, by neutron activation, 290.  
 in metals, by neutron activation, 2975.  
 in minerals, ores or rocks, by neutron activation, 632, 2975.  
 in talc, by solvent extraction - photom., 1960.  
 of Sb<sup>III</sup>, by solvent extraction - photom., 106.  
 of As in, photom., 1209.  
 of Ga in, photom., 2977.  
 of Au in, volum., 1211.  
 of Se, S and Te in, pulse polarogr., 2330.  
 polarogr., 1210.  
**Antimony, reagents for, 3,5-diethyl-2,6-dimercaptothiopyran-4-one**, 2869.  
 5-ethylamino-2-(2-pyridylazo)-*p*-cresol, 106.  
 Rhodamine B, 1960.  
**Antimony(III) oxide**, differentiation from Sb<sub>2</sub>O<sub>3</sub>, spot test for, 1126.  
**Antimony sulphide**, detmn. of O in, photom., 631.  
 sepn. from Sb<sub>2</sub>O<sub>3</sub>, 2974.  
**Antimycin A**, detmn., fluorim., automated, 356.  
**Antioxidants**, detection, in fats, by TLC, spray reagent for, 1553.  
 detmn., in vegetable oils, column chrom. - spectroph., 1554.  
 identn., in plastics used for food packaging, by TLC, 2705.  
 polymeric, detmn. of aromatic amino-groups in, spectroph., 274.  
**Apples**, assay of acid phosphatase in, spectroph., 3247.  
**Argon**, detmn., in mixtures with He, by GLC, without carrier gas, 2344.  
 of <sup>40</sup>Ar in minerals, ores or rocks, gasom., 2345.  
 of CO, H and N in, mass spectrom., 38.  
 of N and O in, mass spectrom., 1763.  
 industrial, analysis, B.S.I. methods for, 2348.  
**Arsenazo III**, analysis of structural isomers of, 1943.  
**Arsenic**, detection, 103.  
 atomic-absorption spectroph., 2860.  
 in biol. materials, in presence of Pb and Tl, by TLC, 1405.  
 detmn., atomic-absorption spectroph., 2972.  
 by Cribrier method, test of quant. efficiency of, 1837.  
 by Marsh method, test of quant. efficiency of, 1836.  
 gravim., 2430.  
 in autopsy material, spectroph., 3130.  
 in biol. materials, 1410.  
 in presence of Br, Hg, Sb and Se, by neutron activation, 290.



**Arsenic, determination—continued**

- in hair, by neutron activation and  $\beta$ -counting, 291.  
 in skin, by neutron activation, 282.  
 in slags, X-ray spectrogr., 2476.  
 in urine, coulomb., 3131.  
 of impurities in, by neutron activation, 2331.  
 of Te in, polarogr., 630.  
 spectroph., 2971.  
 elementary, detection, 1844.  
 for semiconductors, detmn. of impurities in, spectrogr., 1838.

**Arsenic(III) oxide**, detection, spot test for, 1126.  
 detmn., coulomb., 104.

**Arsenic(III) sulphide**, detection, spot test for, 1126.  
 Arsenic, detmn., in mixtures with  $\text{SiH}_4$ ,  $\text{GeH}_4$ ,  $\text{PH}_3$ ,  $\text{H}_2\text{S}$  and  $\text{H}_2$  gas chrom., 613.

**Ascorbic acid**, detmn., colorim., as the 2,2'-bipyridyl- $\text{Fe}^{\text{II}}$  complex, 902.  
 in blood plasma, spectroph., with use of stabilised diazonium salts, 901.  
 identn., in presence of dehydroascorbic acid, by TLC, 903.

**Aspartic acid**,  $\beta$ -hydrazide, complex with  $\text{Cu}^{2+}$ , detmn., spectroph., 3230.

—, **carbamoyl-**,  $\alpha$ -diketone deriv. of, colour and fluorescence reactions of, 2065.

**Asphalt**, analysis, by inverse GLC, 1367.

**Aspirin**. (See *Salicylic acid, acetyl-*.)

**Atranorin**, sepn. from usnic acid, in lichen extracts, by TLC, 1432.

**Atrazine**, detmn., in potable water, by TLC, 994.  
 thin-layer chrom., spray reagent for, 406.

**Atropine**, detmn., in aluminium hydroxide - belladonna tablets, column chrom. - colorim., 353.  
 in nerve-gas antidote, in presence of pralidoxime, column chrom. - photom., 1499.  
 methobromide, detmn., in suppositories, by neutron activation, 3198.  
 sulphate, detmn., in injection, spectroph., 2132.  
 in pharm. tablets, in presence of phenobarbitone, column chrom., 1493.

**Automated methods**, programmed controller for, 427.  
 sampling programmer for, 2236.

**Aviation fuel**, detmn. of existent gum in, B.S.I. method for, 2554.

of 6-*t*-butyl-2,4-xyleneol in, by TLC, 2555.

**Azapetate**, detmn., in pharm. prep., by GLC, 1096C.  
 in presence of phenoxybenzamine, thin-layer chrom. - spectroph., 3225.

**Azide groups**, detmn., in org. compounds, 1908.

**Azinphos-methyl**, detmn., in crops, spectroph., 1590.

identn., in biol. tissues, by TLC and by u.v. and i.r. spectrophotometry, 1425.

**Aziridines**, 1-acyl-deriv. of, sepn., by TLC, 230.

**Azoseptyl**, sepn. from related sulphonamides and detmn., by TLC, 2154.

**B**

**BHA**. (See *Phenol, t-butyl-4-methoxy-*.)

**BHC**. (See *Cyclohexane, hexachloro-*.)

**BHT**. (See *p-Cresol, 2,6-di-t-butyl-*.)

**Bagasse**, detmn. of 2-furaldehyde in distillates from, volum., 2172.

**Balances**. (See *Weighing*.)

**Barbiturates**, detmn., in pharm. prep., complexom., 1512.

in urine, by GLC, 2010.

identn., in urine, by TLC, 1416.

of degradation products of, by TLC, 926.

sepn., by TLC, 1513, 1514.

**Barium**, detmn., by gel diffusion, 30.

gravim., 1749.

in presence of Sr, coulomb., 580.

in sea water, flame photom., 3279.

of  $^{140}\text{Ba}$  in rain water, ion-exchange chrom. - beta counting, 1600.

ring colorim., 2369.

sepn. from Ca and Sr, by ion exchange, 1153.

solvent extraction of, with dihexyl phenyl-

sulphonylphosphoramidate, 59.

**Barium**, reagents for, dihexyl phenylsulphonylphosphoramidate, 59.

dilituric acid, 1749.

**Barium carbonate**, labelled with  $^{14}\text{C}$ , ultrasonic dispersion of, in silica, for liquid-scintillation counting, 3350.

**Barium orthoferrate**, detmn. of  $\text{Fe}^{\text{III}}$  and  $\text{Fe}^{\text{IV}}$  in, complexom., 1263.

**Barium oxide**, detmn. of excess Ba in, gasom., 2373.

**Bauxite**, analysis, 3042.

detmn. of  $\text{Al}_2\text{O}_3$  in, complexom., 1160.

**Bay oil**, detmn. of eugenol in, spectroph., 1958.

**Beer**, analysis for total N,  $\alpha$ -amino-N and carbohydrates, simult., automated, 2198.

bittering substances in, analysis, qual. and quant., by TLC, 970.

detmn., spectroph., E.B.C. recommendations for, 969.

bottled, detmn. of dissolved O in, 2729.

of head retention in, chromom., 971.

detection of quaternary ammonium compounds in, colour reaction for, 975.

detmn. of aliphatic and aromatic alcohols in, by GLC, 3254.

of coagulable-N in, comparison of methods for, 1566.

of colour in, statistical examination of results for, 976.

of oxidation state of, review of methods for, 2199.

of phenolic compounds in, by GLC of trimethylsilyl deriv. of, 974.

of sugars in, by GLC of trimethylsilyl deriv. of, 973.

identn. of carbonyl compounds in, by TLC and GLC, 972.

**Belladonna**, detmn. of alkaloids in, by TLC, 352 1492.

**Belladonna alkaloids**, detmn., in pharm. suspensions, by solvent extraction - column chrom. - spectroph., 3200.

**Benhepazone**, detmn., in tissue, urine and faeces fluorim., 2014.

**Benzalkonium chloride**, detmn., in soln., by temp. programmed GLC, 2156.

**Benzanilide**, thio-, polarogr. reduction of, 211.

S-oxide, polarogr. reduction of, 211.

**Benzene**, alkyl deriv. of, analysis, mass spectrom., 1953.

sepn. from alkylnaphthalenes, evaluation of solvents for, 742.

chloro-deriv. of, analysis, by GLC, 1343.

deriv. of, detmn. of structure of, by proton magnetic resonance, 238.

detmn., in presence of toluene, u.v. spectroph., 2531.

—, **1-chloro-3-isocyanato-**, detmn. of nitro-compounds in, by GLC, 1349.

—, **2-chloro-1,3,5-trinitro-**, identn., in explosives by TLC, 789

—, **1,2-diacetyl-**, use of, as reagent, 8.

- benzene, 1,4-dibromo-**, laser-excited Raman spectrum of, 250.
- , **1,4-dichloro-**, laser-excited Raman spectrum of, 250.
- , **di-isopropyl-**, analysis of mixtures with heptane or hexadecane and 1-methylnaphthalene, by GLC, 3057.
- dihydroperoxide, detmn. of  $H_2O$  in, i.r. spectroph., 2510.
- , **1,4-distyryl-**, detmn. of stereoisomeric composition of, oscilloplogr., 1342.
- , **ethyl-**, detmn., in presence of xylene isomers 2531.
- , **1,2,4-trimethyl-**, analysis, by TLC, 3100.
- , **1,3,5-trinitro-**, identn., in explosives, by TLC, 789.
- benzenecarboxylic acids**, analysis of mixtures of, 3082.
- detmn., review, 1939.
- benzenesulphonic acid, 3-amino-2-hydroxy-5-nitro-**, detmn. of 2-hydroxy-3,5-dinitrobenzenesulphonic acid in, polarogr., 1961.
- , **dodecyl-**, detmn., in sewage, spectroph., 1605.
- benzhexol**, detmn., in pharm. tablets, non-aq. volum. or potentiom., 2152.
- hydrochloride, pptn. and colour tests for, 3226.
- benzidine**, tetra-azotised, use of, as colour reagent, 3048.
- , **diphenyl-**, detmn., potentiom., in acetonitrile, 2539.
- , **tetramethyl-**, detmn., potentiom., in acetonitrile, 2539.
- benzoic acid**, use of, as reagent, 35, 1748.
- benzocaine**, identn., microscop., 2697.
- 1H-Benzo[a]carbazole**, detmn., in air, paper or thin-layer chrom. - spectroph., 413.
- benzoic acid**, detmn., in urine, simult. with hippuric acid, ion-exchange chrom. - spectroph., 2616.
- hydroxy-deriv. of, analysis of mixtures of, by decarboxylation, 2538.
- identn., in foods, by TLC, 1552.
- sepn. of salts, esters and complexes with purine bases of, in pharm. prep., by TLC, 3192.
- , **4-amino-**, isobutyl ester, identn., microscop., 2697.
- , **4-t-butyl-**, detmn., in pharm. prep., by NMR, 918.
- , **3-fluorosulphonyl-**, chlorophenyl esters of, TLC of, 3086.
- , **4-hydroxy-**, esters of, identn., in foods, by TLC, 1552.
- , **4-methoxy-**, detmn., in blood serum, in presence of 4-methoxycinnamic acid, spectroph., 2012.
- benzophenone**, deriv. of, detmn., potentiom., 2534.
- , **2-hydroxy-**, TLC of, 3080.
- benzo[a]pyrene**, detection, in milk, paper chrom., 1545.
- detmn., in air, spectrofluorim., 2224.
- in atmospheric dust, by TLC - spectrofluorim., 1003.
- in foods, column - thin-layer chrom. - u.v. spectroph., 2170.
- in natural water, spectrofluorim., 3273.
- in smoked foods, 2175.
- increase of solubility of, by caffeine plus org. acids, 1352.
- benzoquinone**, deriv. of, identn. of naturally occurring, by TLC, 1434.
- Diels - Alder adducts of, identn., i.r. spectroph., 2535.
- benzothiadiazine**, identn., in pharm. tablets, thin-layer chrom. - i.r. spectroph., 2157.
- Benzoyl peroxide**, detmn., in pharm. prep., in presence of its degradation products, comparison of methods for, 943.
- Benzyl alcohol, o-hydroxy-**, detmn., on paper and thin-layer chromatograms, photom., 2580.
- Berberine**, detmn., thin-layer chrom. - spectroph., 2684.
- Bergapten**, detmn., photom., 919.
- paper chromatography of, 2128.
- Berkelium**, sepn. of  $^{249}Bk^{IV}$  from  $^{144}Ce^{IV}$ , by ion exchange, 1185.
- Beryllium**, complexes with dyes, study of, 1786.
- detmn., atomic-absorption spectroph., 1753.
- complexom., 2891.
- gravim., 53, 94, 1785.
- in minerals, ores or rocks, spectrogr., 54.
- in  $10^{-13}g$  range, by GLC, 1787.
- in urine, fluorim., 799.
- of Cu in, by neutron activation, 1148.
- sepn. from Ga, In or Zr, ion-exchange chrom., 2366.
- Beryllium, reagent for, benzoylacetanilide**, 94.
- Beta-ray back-scattering**, device for analysis of mixtures of elements with neighbouring atomic numbers, 3353.
- review, 3352.
- Beverages**, (See also *Spirits, potable*.)
- alcoholic, detmn. of aldehydes in, spectroph., 2200.
- analysis of phenolic compounds in, electroph., 1095C.
- Biacetyl**, sepn. from acetoin and 2,3-butylene glycol, and detmn., ion-exchange chrom. - colorim., 2038.
- from acetone and  $C_1$  to  $C_7$  alcohols, in fermentation media, gas chrom., 820.
- Bicyclohexyl**, identn., in tobacco distillate, by GLC, 824.
- Bile**, detmn. of As in, 1410.
- of ethacridine lactate in, spectrofluorim., 1419.
- sepn. of [methylene- $^{14}C$ ]tropital and its metabolites in, by TLC, 819.
- Bile acids**, detmn., column chrom. - spectroph., 2062.
- in faeces, ion-exchange - thin-layer chrom., 840.
- GLC behaviour of methanesulphonates and mixed silyl ethers of, 1447.
- Bilirubin**, detmn., in biol. fluids, spectroph., standard soln. for, 2655P.
- in blood serum, automated, 2656.
- spectroph., 2654.
- in urine, spectroph., 890.
- of free and conjugated, in blood plasma, by liquid extraction - column chrom., 334.
- Biliverdin**, detmn., in urine, spectroph., 890.
- Biological fluids**, (See also under specific fluids.)
- detmn. of ajmaline in, spectroph., 295.
- of amino-acids in, paper chrom. - spectroph., 320.
- of F<sup>-</sup> in, by diffusion, 2006.
- of lipids in, by TLC, 2043.
- of N in, automated, comparison with Kjeldahl method, 2595.
- of  $PO_4$  of, polarogr., 2005.
- of pyridoxine in, 2009.
- of urea in, enzymic - fluorim., 1448.
- Biological materials**, (See also *Plants; Vegetables*.)
- analysis, by neutron activation, automated, 3124.
- detection of As, Pb and Tl in, by TLC, 1405.
- detmn. of Sb, As, Br, Hg and Se in, by neutron activation, 290.
- of As in, 1410.
- of Ca in, fluorim., automated, 2591.
- of Ca, Cr, Cu, Mg and Mn in, spectroph., 285.
- of glycols in, spectroph., 2039.
- volum., 1318.

**Biological materials, determination—continued**

- of Fe in, spectroph., 808.
- of Pb in, spectrogr., 1577.
- of Hg in, ion-exchange chrom. - photom., 3127.
- of metals in, by neutron activation-ion-exchange - column chrom., automated, 1985.
- of N in, spectroph., 1406.
- of  $\text{PO}_4^{3-}$  in, by GLC of trimethylsilyl deriv., 805.
- of P in, flame spectroph., 288.
- of Th in, by solvent extraction - photom., 1998.
- of  $^3\text{H}$  in, by solid-state scintillation counting, 1402.

**Biological tissues, detection of penicillin in, paper chrom. - microbiol., 1414.**

- of chlorliphon in, by TLC, 2024.
- of tubocurarine in, in presence of other muscle relaxants, by ion exchange - spectroph., 809.
- detmn. of adenosine 3',5'-phosphate in, ion exchange chrom. - radiom., 898.
- of alkali-metals in, flame photom., 284.
- of alkaline-earth metals in, complexom., 284.
- non-aq. volum., 558, 1768.
- of B in, atomic-absorption spectroph., 2592.
- of Ca in, complexom. - spectroph., 284.
- of extracellular space in, with  $^3\text{H}$ -labelled inulin, 792.
- of lipids in, by TLC, 2043.
- of Mg in, complexom. - spectroph., 284.
- of malathion in, by TLC, 2024.
- of malonaldehyde in, chrom. - spectroph., 2035.
- of metals in, comparison of methods for, 1988.
- of P in, enzymic - spectrofluorim., 289.
- of physostigmine in, fluorim., 810.
- of K in, flame photom., 284.
- of progesterone in, by double-isotope deriv. formation, 2053.
- of Na in, flame photom., 284.
- of spiromycin in, column - thin-layer chrom. - microbiol., 2607.
- of  $\text{ThO}_2$  deposits in, by neutron activation, 1426.
- of uridine diphosphate glucose and glucuronic acid in, enzymic - thin-layer chrom. - spectrofluorim., 1478.

**Biperiden, detmn., in pharm. tablets, non-aq. volum., 2152.****Biphenyl, detection and semi-quant. detmn., on citrus fruits, by solvent extraction - TLC, 385.**

detmn., in citrus peel, by GLC - spectroph., 1561.

in presence of 2-phenylphenol and diphenylamine, by TLC, GLC and spectrofluorimetry, 2188.

TLC of, on carbon black, 2541.

**—, 4-amino-, detmn., in aniline, paper chrom., 248.****Bismuth, complexes with aminopolycarboxylic acids, study of, 1840.**

detmn., atomic-fluorescence spectroph., 1839.

biamperom., 1213.

by solvent extraction - spectroph., 107, 1212.

gravim., 2979, 2980, 2981.

in copper, complexom., 2357.

in minerals, ores or rocks, atomic-absorption spectroph., 184.

in presence of Cd or Pb, paper chrom., 108.

of In, complexom., 2431.

in urine and liver, polarogr., after cementation on zinc, 1989.

of Cu in, by neutron activation, 1148.

of Pb in, by neutron activation, interference of natural radioactivity in, 621.

of Se, S and Te in, pulse polarogr., 2330.

photom., 633.

sepn., by redox exchange with Hg, 3C.

from Te, ion-exchange chrom., 2982.

**Bismuth, reagents for, diphenic acid, 2981.**

nioxime, 2979.

N-phenylbenzohydroxamic acid, 2980.

4-(2-pyridylazo)resorcinol, 107.

Rhodamine B, 1212.

thiocaprolactam, 633.

xylenol orange, 2886.

**Bisphenol A. (See Phenol, 4,4'-isopropylidenedi-.)****Bitumens, characterisation, by outline - unit area chromatography, 1946.****Biuret, deriv. of, detection, in presence of related compounds, by TLC, 735.****Blast-furnace gas, analysis, detmn. of CO and CO<sub>2</sub> in gases for use in calibration of instrument for, 1617.**

detmn. of S in, 116.

**Blood, assay of cytochrome oxidase in, spectroph., 2112.**

of peroxidase, glucose oxidase and xanthine oxidase in, spectrofluorim., 2113.

computation of pH,  $p\text{CO}_2$  or  $\text{CO}_2$  contents of errors in the use of the Henderson - Hasselbalch equation for, 1991.

detection of antidiabetic drugs in, by TLC, 1422.

of muscle-relaxants in, by ion exchange - spectroph., 809.

detmn. of  $\text{NH}_3$  in, colorim., 2003.

of As in, 1410.

of Ca in, fluorim., automated, 3126.

of  $^{14}\text{C}$ -labelled  $\text{CO}_2$  in, by scintillation counting, 804.

of CO in, by GLC, 2593.

of chlorpromazine in, in presence of its metabolites, by GLC of trifluoroacetyl deriv., 2604.

of creatinine in, spectroph., method of extraction for, 857.

of diazepam in, by GLC, 812.

of drugs in, by solvent extraction and GLC, 2008.

of ethanol in, by GLC, automated, 2021.

of ethyl ether in, by GLC, 2016.

of extracellular space in, with  $^3\text{H}$ -labelled inulin, 792.

of fibrinogen in, as fibrin, 330.

spectroph., 883.

of glucose in, by Dextrostix test, limitation of, 1427.

of glycosyl ceramides in, column - thin-layer chrom., 836.

of Au in, by neutron activation, 3125.

of haemoglobin in, spectroph., 331.

of  $\beta$ -hydroxy-5-ene steroids in, thin-layer chrom. - densitom., 2061.

of 5-hydroxytryptamine in, fluorim., 2071.

of pyruvic and lactic acids in, enzymic fluorim., automated, 2615.

of Th and U in, by neutron activation, 1999.

of tyrosine in, fluorim., automated, 869.

of urea in, spectroph., as complex with bisacetyl monoxime, 2064.

of warfarin in, by solvent extraction - polarogr., 3138.

identn. of chlorpromazine in, gas chrom. - mass spectrom., 813.

**Blood plasma, analysis, assessment of the 'average of normals' quality-control method for, 2586.**

detmn. of aldosterone in, by TLC, 843.

of amino-acids in, automated, 2073.

of 5-aminolaevulinic acid in, ion-exchange chrom. - spectroph., 2034.

of ascorbic acid in, spectroph., 901.

of bilirubin, free and conjugated, in, by liquid extraction - column chrom., 334.



- Blood plasma**, determination—*continued*  
 of Ca in, fluorim., automated, 3126.  
 of catecholamines in, fluorim., 2067.  
 of citrate in, spectroph., 826.  
 of corticosteroids in, fluorim., 849.  
 of dicoumarol in, by solvent extraction - spectroph., 2019.  
 of epitestosterone,  $^3\text{H}$ -labelled, in, column-thin-layer chrom. - radiom., 2056.  
 of fatty acids, free, in, colorim., 827.  
 of fibrinogen in, spectroph., 883, 884.  
 of turbidim., lack of precision of methods of, 2088.  
 of glucose in, enzymic, 'test pack' reagents for, 2028.  
 spectroph., 821.  
 of glycerol in, error in, due to lubricants stopper, 2040.  
 of haemoglobin in, spectroph., 2094.  
 of hydrocortisone in, fluorim., 3152.  
 of Fe in, atomic-absorption spectroph., 2007.  
 of lactose in, enzymic - spectroph., 2030.  
 of oestradiol and oestrone in, radiom., use of triply-labelled deriv. in, 2636.  
 of 17-oxosteroid sulphates in, photom., 842.  
 of progesterone and  $20\alpha$ -hydroxypregn-4-en-one in, by double-isotope deriv. formation, 2053.  
 of steroids in, by TLC and GLC of the hepta-fluorobutyrate deriv., 1445.  
 of testosterone in, by isotopic dilution, 2054.  
 of triglycerides in, 2623.  
 of urea-N in, by biacetyl monoxime reaction, without deproteinisation, 314.  
 of vitamin B<sub>6</sub> group in, paper chrom., 2009.  
 of warfarin in, by solvent extraction - polarogr., 3138.  
 of Zn in, atomic-absorption spectroph., 1997.  
 fluorim., 1996.  
 screening test for SCN<sup>-</sup> in, 2001.  
 sepn. of lipids of, by TLC, 832.
- Blood serum**, analysis, stability of reconstituted samples for, 1987.  
 assay of alkaline phosphatase in, thin-layer electroph., 2119.  
 of arginase in, gel ion-exchange chrom. spectroph., 347.  
 of cathepsin in, polarogr., 346.  
 of cholinesterase in, spectroph., 2118.  
 of creatine kinase in, spectroph., 908, 2114.  
 of hydrolase in, potentiom., 2116.  
 of ornithine carbamoyltransferase in, spectroph., 907.  
 detection of oxazepam in, by TLC, 2605.  
 detmn. of amino-acids in, automated, 2073.  
 of aralkylamines in, thin-layer chrom. - fluorim., 2017.  
 of bilirubin in, automated, 2656.  
 spectroph., 2654.  
 of Ca in, complexom., 801, 802.  
 and Mg in, photom., 283.  
 and P in, atomic-absorption spectroph., automated, 1995.  
 automated, 1994.  
 of cholesterol in, automated, 2050.  
 colorim., review of methods for, 2048.  
 spectroph., 2049.  
 of creatinine in, automated, 858.  
 spectroph., method of extraction for, 857.  
 of ethanol in, by GLC, 2609.  
 of ethchlorvynol in, by GLC, 2011.  
 of fatty acids in, paper chrom., 2033.  
 of F<sup>-</sup> in, ion-exchange chrom. - spectroph., 3133.  
 of gamma-globulin in, column chrom. - spectroph., 2085.
- Blood serum**, determination—*continued*  
 of haptoglobin in, thin-layer electroph., 881.  
 of hexosamines, protein-bound, in, spectroph., 2029.  
 of inorg. P in, photom., 1407.  
 of Fe in, spectroph., 808.  
 of Fe-binding capacity of, radiom., 2601.  
 of lipids in, gravim., 2625.  
 of Li in, atomic-absorption or flame-emission spectroph., 1992.  
 flame photom., 797.  
 of Mg in, comparison of methods for, 2590.  
 of mercaptopurine in, spectrofluorim., 1423.  
 of 4-methoxycinnamic acid in, spectroph., 2012.  
 of org. I in, automated, 293.  
 of orotic acid in, spectroph., 3140.  
 of phenobarbitone in, in presence of other drugs, by TLC - spectroph., 811.  
 of 'substance X' in, spectroph., 3123.  
 of sulthiame in, by TLC - spectroph., 2018.  
 of triglycerides in, fluorim., semi-automated, 2624.  
 of urea in, spectroph., 852.  
 of urea-N in, by biacetyl monoxime reaction, without deproteinisation, 314.  
 of uric acid in, comparison of methods for, 2638.  
 enzymic - colorim., 2639.  
 of vitamin A in, by TLC, 900.  
 of warfarin in, by solvent extraction - polarogr., 3138.  
 isolation of albumin from, 2087.  
 sepn. of amino-acids of, paper chrom., 3163.  
 of lipids of, by preparative TLC, 3148.  
 of macroglobulins of, paper chrom. or electroph., 886.
- Boiler water**. (See *Water, industrial*.)
- Bone**, analysis, i.r. spectroph. compared with i.r. attenuated total reflectance spectroph., 2589.  
 detmn. of F<sup>-</sup> in, by micro-diffusion - spectroph., 807.  
 of Sr in, in presence of Ca, flame photom., after removal of PO<sub>4</sub><sup>3-</sup>, 1403.
- Borane**, amine adducts of, detmn. of B and N in, volum., 1905.
- Borate**, tetrafluoro-, pptn. of, by antipyrinyl dyes, 2380.
- Boric acid**, detmn., volum., 1159.  
 as complexes with polyhydric compounds, 2908.
- Boron**, detmn., atomic-absorption spectroph., 1753.  
 in biol. tissues, atomic-absorption spectroph., 2592.  
 in fertilisers, soil and natural water, spectroph., 2210.  
 in org. compounds, spectroph., 204.  
 in presence of metals, by neutron activation - autoradiogr., 69.  
 potentiom., 2907.  
 of Si, photom., 193.  
 in soil, fluorim., 2204.
- Boron**, reagents for, benzoin, 2204.  
 quinalizarin, 3035.
- Boron nitride**, phase analysis of compounds containing, 2910.
- Boron trifluoride**, complexes with heterocyclic N-compounds, detmn. of B in, 3054.
- Bradykinin**, sepn. from kallidin and methionyl-lysylbradykinin, paper electroph. - paper chrom., 3175.
- Brain**, detmn. of cations in, atomic-absorption spectroph., 795.  
 sepn. of gangliosides in, by solvent extraction - TLC, 2626.

- Brain**, sepn. of proteins of, disc electroph., on Sephadex gel, 3176.
- Brandy**. (See *Spirits, potable*.)
- Bread**, detmn. of lactic acid in, comparison of methods for, 2709.
- Brewing**, applications of GLC in, review, 964.
- Broad bean**, detection of hydroxyproline in protein fractions extracted from, chrom., 876.
- Bromacil**, detmn., in crops and soil, by micro-coulom.-GLC, 2741.  
in soil, by TLC, 2740.
- Bromide**, detmn., amperom., 3008.  
in foods treated with bromomethane, photom., 2168.  
in urine, colorim., automated, 292.
- Bromine**, detmn., in biol. materials, in presence of As, Hg, Sb and Se, by neutron activation, 290.  
in presence of F, by neutron activation, 3010.
- Bromoxynil**, detmn., in mixtures of phenolic pesticides, by GLC, 2220.
- Bronze**, aluminium, analysis, spectrogr., 2887.  
analysis, spectrogr., 2887.  
detmn. of Al, Cu, Fe and Mn in, complexom., 2358.  
of Pb and Zn in, complexom., 49.
- Buformin**, detection, in urine, by TLC, 1422.
- Butadiene**, detmn. of  $\text{NH}_3$  in, photom., 1394.  
of polyperoxide in, volum., 216.
- Butane, 2,2-bis(t-butylperoxy)-**, detmn. of t-butyl hydroperoxide in, by TLC, 714.
- Butane-1,4-diamine, NNN'-tetramethyl-**, detmn., thin-layer chrom. - spectroph., 1498.
- Butane-2,3-diol**, detmn., in lipids and phospholipids, by GLC, 2041.  
sepn. from biacetyl and acetoin and detmn., ion-exchange chrom. - colorim., 2038.
- Butan-2-one, 3-hydroxy-**, sepn. from biacetyl and 2,3-butyleneglycol and detmn., ion-exchange chrom. - colorim., 2038.
- But-3-en-2-one, 1,1,1-trifluoro-4-mercapto-4-(2-thienyl)-**. (See *Acetone, thio-2-thenoyltrifluoro-*.)
- But-1-en-3-yne**, deriv. of, GLC of, 1315.
- Butobarbitone**, detmn., in pharm. prep., semiquant., by TLC, 1513.
- Butter**, detmn. of organochlorine insecticides in, by extractive distillation and GLC, 956.
- Butter fat**, analysis of volatile compounds in, by distillation and GLC, 376.  
detection of adulteration by detmn. of sterols in, by GLC as trimethylsilyl deriv., 2177.
- s-Butylamine**, detmn., in fruit, by GLC, 2191.
- Butylated hydroxyanisole**. (See *Phenol, t-butyl-4-methoxy-*.)
- Butylated hydroxytoluene**. (See *p-Cresol, 2,6-di-t-butyl-*.)
- Butyric acid, 4-(4-chloro-2-methylphenoxy)-**. (See *MCPB*.)
- , **4-(2,4-dichlorophenoxy)-**. (See *2,4-DB*.)
- C**
- Cacao**, analysis of aromatic constituents of, in samples from various sources, 1095C.  
identn. of aroma constituents in, by GLC, 1564.
- Cadmium**, atomic fluorescence of, influence of acid concn. on, 583.  
detmn., as sulphide, in presence of other metals, 1155.  
by co-ordination chain reaction with automated rate measurement, 17, 18.  
by solvent extraction with dithizone, with sub-stoichiometric isotope dilution, 584.  
gravim., 2379.
- Cadmium**, determination—continued  
in org. materials, photom., 703.  
in presence of Ag and Tl, amperom., 1754.  
of other metals, amperom., 2900.  
of Zn, anodic-stripping chronopotentiom., 1697.  
and other elements, in minerals, ores or rocks, atomic-absorption spectroph., 582.  
in urine, simult. with Pb, polarogr., 2002  
of Ni in, photom., 1789.  
production of carrier-free  $^{115}\text{Cd}$  from fission products, by solvent extraction, 2901.
- Cadmium, reagents for**, cadion-2B, 703.  
 $\beta$ -resorcylaldehyde thiosemicarbazone, 2379.
- Cadmium selenide**, analysis, 2378.  
detmn. of  $\text{Cl}^-$  in, potentiom., 2902.  
of impurities in, photom., 2376.
- Cadmium sulphide**, detmn. of  $\text{Cl}^-$  in, potentiom., 2902.  
of hyperstoichiometric Cd and S in, spectrogr., 1790.  
of impurities in, photom., 2376.  
of Se in, 2378.
- Caesium**, detection, paper chrom., 552.  
detmn., gravim., 1749, 2879.  
in presence of K, gravim., 2879.  
of  $^{137}\text{Cs}$  in industrial wastes, by isotope dilution and gamma-counting, 2232.  
in oil-bearing seeds, ion-exchange chrom. - radiom., 3258.  
in rain water, ion-exchange chrom. - beta-counting, 1600.  
of O in, by vacuum extraction, 2880.
- Caesium, reagents for**, caesignost, 2879.  
dilutric acid, 1749.
- Caesium iodide**, detmn. of Ca and Mg in, spectrogr., correction for blank in, 1136.
- Caffeic acid**, detmn., in fruit juice or jam, simult. with cynarin and chlorogenic acid, by TLC, 2727.
- Caffeine**, detmn., in cacao bean, simult. with theobromine and theophylline, by TLC, 2197.  
in liquid cola extract, photom., 1502.  
in pharm. prep., in presence of Na benzoate and Na salicylate, by NMR, 918.  
in pharm. tablets, spectroph., 3199.
- Calcium**, detection, by interference in spectroph. detmn. of Ti with tiron, 1151.  
detmn., complexom., comparison of indicator for, 2367.  
indicator for, 57.  
in biol. materials, by fluorim. titration, automated, 2591.  
simult. with Cu, Mg, Mn and Cr, spectroph. elimination of interferences in, 285.  
in biol. tissues, complexom. - spectroph., 284.  
in blood and blood plasma, fluorim., automated, 3126.  
in blood serum, complexom., 801, 802.  
photom., 283.  
simult. with P, atomic-absorption spectroph., automated, 1995.  
automated, 1994.  
in minerals, ores or rocks, X-ray spectrogr., 1138.  
in natural water, atomic-absorption or emission spectroph., 3275.  
simult. with Mg, complexom., 1006.  
in org. salts, complexom., with  $^{110m}\text{Ag}$  as indicator, 2678.  
in presence of Al, Mg and Fe, conductim., 2897.  
of Mg, atomic-absorption spectroph., 2896.  
complexom., with Ag indicator-electrode, 1152.  
interferences in, 2895.

- Calcium**, determination—*continued*  
 in thymus, ion-exchange chrom. - spectroph., 800.  
 in urine, complexom., 801.  
 and faeces, ion-exchange chrom. - volum., 1993.  
 of  $^{42}\text{Ca}$  and  $^{48}\text{Ca}$  by neutron time-of-flight spectrometry, 2368.  
 of  $^{48}\text{Ca}$ , by liquid scintillation counting, comparison of solvents for, 2736.  
 polarogr., 58.  
 potentiom., with an ion-exchange electrode, 2898.  
 ring colorim., 2369.  
 sepn. from Ba and Sr, by ion exchange, 1153.  
 from Mg, by ion exchange, 579.
- Calcium**, reagents for, 2-chloro-5-cyano-3,6-di-hydroxy-*p*-benzoquinone, 58.  
 glyoxal bis(2-hydroxyanil), 800.
- Calcium phosphate**, dibasic, detmn. of Ca in, ion-exchange chrom. - volum., 364.
- Calcium salts**, dissolution of, by Dowex A-1 resin, 577.
- Calcium sulphate**, hemihydrate, detmn. of gypsum in, by differential thermal analysis, 578.
- Calorimetry**, micro-apparatus for, 1716.
- Canada balsam**, TLC of, 1963.
- Cannabis**, identn. of constituents in, by TLC and GLC as trimethylsilyl ethers, 1505.  
 sepn. of constituents of, by GLC, 1504.  
 by TLC, 1503.
- Caprolactam**, detmn. of aromatic acids in production of, by GLC, 269.
- Capsaicin**, detmn., in capsicum spices, gas chrom., 380.
- Captafol**, detmn., in fruits, by solvent extraction - GLC, 959.
- Captan**, detmn., in fruits and vegetables, by solvent extraction - GLC, 957.  
 in wine, i.r. spectroph., 2195.
- Carbamic acid**, *NN*-alkyldithio-, dialkyl esters of, sepn., by GLC, 1338.
- , dithio-, compounds with amines, detmn., amperom., 3075.  
 metal complexes of, applications of, 1737.
- , ethylenebisdithio-, detmn., in plants, spectroph., 408.
- , *N*-methyl-, 4-benzo[*b*]thien-4-yl ester, detmn., spectroph. and comparison of methods for, 999.  
 phenyl esters, GLC of, 2524.
- , *N*-(toluene-*p*-sulphonyl)-, esters of, GLC of, 749.
- Carbaryl**, detection, on thin-layer chromatograms, enzymic, 2219.  
 detmn., of  $^{14}\text{C}$ -labelled, in milk, radiom., 2190.  
 on vegetables, spectroph., 409.  
 screening test for, on fruits and vegetables, 958.
- Carbasone**, detmn., in tablets, in presence of Fradil, chloramphenicol and trichomycin, X-ray diffractom., 940.
- Carbazole**, detmn., in air, paper- or thin-layer chrom. - spectroph., 413.
- Carbohydrates**. (See also *Sugars*.)  
 analysis, in plants, paper chrom., 1378.  
 detmn., in plant sap, by anthrone method, elimination of interference by  $\text{NO}_3^-$ , 300.  
 ion-exchange chrom., 265.  
 sepn., by GLC, as trifluoroacetyl deriv., 305.  
 by TLC, as trimethylsilyl deriv., 3065.  
 TLC of, 2850C.  
 thin-layer electrophoresis of, 1320.
- 4-Carboline**. (See 9H-Pyrido[3,4-*b*]indole.)
- Carbon**, detection of  $^{14}\text{C}$  in biol. systems, scintillation microscope for, 3362.  
 detmn., in dental enamel, by deuteron activation, 1404.  
 in metals, by photon activation, 1186.  
 in org. compounds, gravim., automated, 197.  
 of  $^{14}\text{C}$ , autoradiogr., effect of paper thickness on, 2C.  
 in biol. materials, by solid-state scintillation counting, 1402.  
 in org. compounds, by O-flask method, apparatus for, 1035.
- Carbon dioxide**, collection of  $^{14}\text{CO}_2$  for scintillation counting, apparatus for, 1984.  
 from gas chrom. H-flame detector, 449.  
 detmn., conductim., apparatus for, 1027.  
 in natural water, by ppt.-fusion method, 3276.  
 non-aq. volum., apparatus for, 1187.  
 of  $^{14}\text{CO}_2$  in blood, by scintillation counting, 804.  
 in GLC effluents, proportional counter for, 450.
- Carbon monoxide**, detection, in pulmonary air, in presence of town-gas hydrocarbons, by GLC, 3128.  
 detmn., in aq. soln., voltamm., 611.  
 in blood, by GLC, 2593.
- Carbonate**, detmn., by isotope dilution, 1188.
- Carbonyl compounds**. (See also *Aldehydes*; *Ketones*.)  
 analysis of mixtures of alkanals, alkan-2-ones and alk-2-enals, by GLC, 1325.  
 detmn. of  $\text{H}_2\text{O}$  in, by Karl Fischer method, 1893, 1894.  
 reaction-GLC of, 1326.
- Carbonyl sulphide**, detmn., in propene, by GLC, 215.
- Carbophenothion**, sepn. from plant extracts by TLC and spectroph. detmn. of P, 3268.
- Carboxylic acids**. (For the higher members of the aliphatic series see *Fatty acids*. See also *Oxo-acids*, *Phenolic acids*.)  
 aliphatic, halides, sepn., by GLC, 729.  
 volatile, analysis of mixtures of, in aq. soln., by GLC, 224.  
 aminopoly-, Na salts, sepn., paper chrom., 3236.  
 analysis of mixtures with  $\text{H}_2\text{SO}_4$ , conductim., 695.  
 aromatic, detmn., paper chrom. and electroph., 2C.  
 mono- and di-, analysis, by GLC, 2537.  
 $\text{C}_1$  to  $\text{C}_8$ , detection, ultramicro-, 1927.  
 $\text{C}_2$  to  $\text{C}_5$  satd., TLC of hydroxamic acid deriv. of, 725.  
 $\text{C}_3$  to  $\text{C}_7$ , detmn., paper chrom., 724.  
 $\text{C}_3$  to  $\text{C}_8$ , synthetic, analysis, by GLC, 258.  
 chlorides, GLC of, 226.  
 detmn., by GLC, by pyrolysis of their tetramethylammonium salts, 225.  
 in rumen fluid, by GLC, 2032.  
 of mixtures of, conductim., 2517.  
 from sucrose oxidation, detmn., by TLC, 2516.  
 gel-permeation chromatography of, 1316.  
 2-hydroxy-, detection, paper chrom., reagents for, 2519.  
 ion-exchange chromatography of, automated, 721.  
 mass spectrometry of, as fluoroalkyl esters, 1330.  
 poly-, detmn., by GLC, 2579.
- Carbutamide**, detection, in urine, by TLC or column chrom. - i.r. spectroph., 1422.
- Carcinolinipin**. (See *Cholesteryl*, *esters*, 14-methylhexadecanoyl.)
- Carotenoids**, detmn., in vegetable oils, column chrom. - spectroph., 980.  
 precursors of, sepn., column chrom. on diethylaminoethylcellulose, 2630.



- Carvacrol**, detmn., polarogr., as 1-fluoro-2,4-dinitrophenyl ether, 768.  
sepn. from thymol, by TLC, 1959.
- Cashew-nut shell liquid**, identn. of alkylphenols in, paper and thin-layer chrom., 3117.
- Cashew nuts**, ground, detection of adulteration of ground almonds by, 1547.
- Castor oil**, sepn. of mono- from di- and tri-glycerides of, 783.
- Catalysts**, detmn. of  $\text{Cr}_2\text{O}_3$ ,  $\text{Ni}_2\text{O}_3$ ,  $\text{P}_2\text{O}_5$  and  $\text{CaO}$  in, spectrogr., 1759.  
of Ru in, polarogr., 1883.
- Catechin**, detmn., in fruits, in presence of epicatechin, paper chrom. - densitom., 2179.
- Catecholamines**, detmn., column chrom. - electrom., 1449.  
fluorim., 2640, 2641.  
in blood plasma and urine, fluorim., 2067.
- Cations**. (See also *Metals*.)  
adsorption of, from  $\text{H}_2\text{SO}_4$  - HF mixtures, by ion exchange, 25.  
complexes with  $\text{SCN}^-$ , ion-exchange paper chromatography of, 24.  
detection, ring colorim., 1750.  
displacement ion-exchange chromatography of, 1751.  
ion-exchange behaviour of, in HF - org. solvent media, 1744.  
ion-exchange paper chromatography of, with aq. org. eluents, 23.  
paper chromatography of, 1742.  
effect of  $\text{SCN}^-$ , on, 32.  
paper electrophoresis of, in acetate buffers, 22.  
sepn., by TLC, of complexes of, 2339.  
on  $\text{Ce}^{\text{IV}}$  phosphate, 27.  
on microcrystalline cellulose, 21.  
in fused alkali nitrates, electrom., 1114.  
of binary mixtures of, by two-dimensional electrophoresis in a slit-type column, 1133.
- Caviar**, identn. of amines in, by GLC, 1541.
- Cedarwood oil**, identn. of sesquiterpenes in, i.r. spectrogr., 1372.
- Cellobiose**, detmn., by periodate oxidation, 3062.
- Cellophane**, polymer-coated, detmn. of solvent residues in, by GLC, sampling apparatus for, 2165.
- Cellulose**, detmn. of Cu in, X-ray spectrogr., 264.  
pulp, detmn. of acetyl groups in, 1965.
- , **carboxymethyl-**, extraction from milk and detmn., spectrogr., 2720.
- , **nitro-**, detmn., spectrogr., 1335.
- , **O-(methylsulphonyl-ethyl)-**, measurement of distribution of substituents in, by TLC, 2564.
- Cellulose formal**, detmn. of formaldehyde in, 3102.
- Cellulose xanthate**, detmn. of primary and secondary xanthate groups in, 2563.
- Cement**, detmn. of Ca in raw mix for, X-ray spectrogr. and beta-ray back-scattering, 2493.  
of Co and Ni in, spectrogr., 3046.  
identn. of elements in, X-ray spectrogr., 694.
- Centrifugation**, continuous-flow, technique for, 2248.  
gradient column, micule spheres as density markers for, 1032.  
ultra-, density-gradient loading device for, 2249.  
use of acrylamide gel in, 1622.  
zonal, rotors for, 1034.
- Cephaloridine**, detmn., in presence of benzylpenicillin, oscillography, 1508.
- Ceramics**, analysis of defects in, by electron microprobe, 1294.  
beryllium oxide, detmn. of S in, conductim., 1892.
- Ceramics—continued**  
detmn. of Fe and Ti in, a.c. polarogr., 3045.  
polarogr., 693.  
of O in, by photon activation, 1186.  
mediaeval, detmn. of trace elements in, by neutron activation, 2492.
- Ceramides**, glycosyl-, detmn., in blood, column-thin-layer chrom., 836.
- Cereals**, analysis of amino-acids of, automated, 945.  
detmn. of dichlorvos in, column chrom. - spectrogr., 2746.  
of starch in, review of methods for, 3243.  
milling products of, evaluation of, review of methods and instruments for, 371.
- Cerebrospinal fluid**, detection of oxazepam in, by TLC, 2605.  
detmn. of ethyl ether in, by GLC, 2016.  
of glucose in, spectrogr., 821.  
of 5-hydroxytryptamine in, fluorim., 2071.
- Cerium**, detmn., in iron and iron alloys, spectrogr., 667.  
in minerals, ores or rocks, by neutron activation, 1174.  
by solvent extraction - spectrogr., 1181.  
in presence of Th, Ti and Zr, ring colorim., 1755.  
of  $\text{Ce}^{\text{III}}$  in other rare-earth metals, fluorim., 82.  
potentiom., 1805.  
spectroph., 2402.  
volum., 81.  
of  $^{144}\text{Ce}$  in rain water, ion-exchange chrom. - beta counting, 1600.  
simult. with Fe, spectrogr., 604.  
volum., oxidation of  $\text{Ce}^{\text{III}}$  to  $\text{Ce}^{\text{IV}}$  for, 603.  
sepn. of  $^{144}\text{Ce}^{\text{IV}}$  from  $^{240}\text{Bk}^{\text{IV}}$ , by ion exchange, 1185.  
solvent extraction of  $\text{Ce}^{\text{III}}$ , 605.
- Cerium**, reagent for, 8-hydroxyquinoline, 667.
- Cerium(IV) ammonium nitrate**, detmn. of Th in, spectrogr., 2404.
- Cerium(IV) nitrate**, detmn. of La, Sm and Th in, by neutron activation, 2927.
- Cerium(IV) oxide**, detmn. of Sm in, spectrofluorim., 2403.
- Cerium(IV) sulphate**, standardisation of soln. of, 1739.
- Cermets**, UC - Ru and UC/PuC - Ru, detmn. of Ru in, by isotope dilution, 610.
- Cheese**, detmn. of lactose in, column chrom. - spectrogr., 2176.  
of Mn in, by solvent extraction - spectrogr., 375.  
freeze-dried, detmn. of moisture in, 1546.
- Chick oedema factor**, detmn., in fats and fatty acids, by GLC, clean-up procedure for, 1575.
- Chloral hydrate**, detmn., in mixtures with trichloroacetic acid, trichloroethanol and urochloralic acid, spectrogr., 298.
- Chloramine-B**, detmn. of  $\text{ClO}^-$  in, potentiom., 1253.
- Chloramphenicol**, detmn. in pharm. products colorim., 2688.  
in pharm. tablets, in presence of other drugs X-ray diffractom., 940.
- Chlorate**, detmn., volum., 3009.
- Chlordantoin**, detmn., in suppositories, by GLC, 936.
- Chlordiazepoxide**, detmn., in urine, by TLC - i.r. spectrogr., 2015.  
identn., in urine, by TLC, 1416.
- Chloride**, detmn., amperom., 3008.
- Chlorine**, detmn., in biol. materials, working ranges of methods used for, 2698.  
in org. compounds, simult. with S, by O-flash combustion - photom., 199.

- Chlorine**, determination—*continued*  
 of  $^{36}\text{Cl}$  in biol. materials, by solid-state scintillation counting, 1402.  
 polarogr., continuous, 2456.
- Chlorine, organic compounds of**, detmn. of  $\text{H}_2\text{O}$  in, by Karl Fischer method, in presence of active  $\text{Cl}$ , 713.
- Chlorine trifluoride**, detection, in air, by GLC, 410.
- Chlorite** (*the mineral*), detmn., in clays and mineral deposits, thermogravim., 1291.
- Chlormadinone**, detmn., in feeding-stuffs, column - gas chrom., 1580.
- Chlorogenic acid**, detmn., in fruit juice or jam, simult. with cynarin and caffeic acid, by TLC, 2727.
- Chlorothiazide**, detection, in presence of 4-amino-6-chlorobenzene-*m*-disulphonamide, by TLC, 3233.
- Chlorpheniramine**, detmn., in blood serum and urine, thin-layer chrom. - fluorim., 2017.
- Chlorphenoxamine**, detection, spectrofluorim., 2698.
- Chlorpromazine**, glucuronides, detmn., in urine, spectroph., 815.  
 identn., in blood, gas chrom. - mass spectrom., 813.  
 in presence of its metabolites, by GLC of trifluoroacetyl deriv., 2604.  
 mass spectrom., 2693.  
 metabolites of, identn., in biol. fluids and tissues, by u.v. and attenuated total reflectance i.r. spectra of, 814.  
 sulphoxide, identn., in urine, 1417.
- Chlorpropamide**, detection, in urine, by TLC, 1422.
- Chlorpropham**, detmn., in herbicide prep., by GLC, 992.  
 in potatoes, column - thin-layer chrom., 1586.
- Chlorprothixene**, detmn., in biol. fluids, u.v. spectroph., 296.
- Chlorquinaldol**, detection of, 2-aminophenol in, by TLC, spray reagent for, 1521.
- Chlortetracycline**, detmn., in presence of related antibiotics, photom., 2137.
- Chocolate**, milk, detmn. of milk protein in, by the A.O.A.C. method, collaborative study of, 2707.
- Cholic acid, dihydroxy-**, sepn. of isomers of, by TLC, 312.
- , trihydroxy**, sepn. of isomers of, by TLC, 312.
- Cholanthrene, 3-methyl-**, detection, in milk, paper chrom., 1545.
- Cholecalciferol**. (See *Vitamin D*.)
- Cholesterol**, detmn., in blood serum, automated, 2050.  
 colorim., review of methods for, 2048.  
 spectroph., elimination of bilirubin effect in, 2049.  
 sepn. from cholesteryl acetate and hexadecanol, column chrom., 769.
- Cholesteryl esters**, identn., in tobacco, by column chromatography and GLC of dimethylsilyl ethers of, 1444.
- 14-methylhexadecanoyl**, detmn., in blood serum and tissues, column gas chrom., 3149.
- sepn.**, comparison of paper chromatography and TLC for 2C.
- Choline, acetyl-**, detmn., simult. with related compounds, by GLC as demethylation products, 2069.
- , chloro-**, chloride, detmn., in wheat grain and straw, column chrom. - spectroph., 991.
- , succinyl-**. (See *Succinylcholine*.)
- Cholohydroxamic acid**, detmn., in biol. tissues, column chrom. - spectroph., 313.
- Chromatography** (*general*), applications in inorg. analysis, review, 13.
- Chromatography, column**, apparatus for, 2254.  
 automated, 1040.  
 columns for, device for packing, 3291P.  
 drg., 1625.  
 filling of capillary, 1037.  
 hydrophilic - organophilic, 1038.  
 pore-controlled glass as, 3293.  
 silica gel as, 1036.  
 silicic acid as, 1042.  
 standardisation of Florisil for, 2255.  
 temp.-controlled, 3292.  
 continuous flow-meter for, automated, 1039.  
 efficiency of columns connected in series, 2253.  
 density gradient, monitoring system for, 1033.  
 detection in, by GLC, 2788.  
 polarogr., method for, 1044.  
 use of endless belt in, 2778.  
 detector for, u.v. photom., 2777.  
 fraction collector for, 1629.  
 gel-permeation, application to acids and alcohols, 1316.  
 inorg., calculation of distribution coeff. in, 1743.  
 technique of, 429.  
 use of benzene as solvent in, 3047.  
 of porous poly(ethanediol methacrylate) in, 1626.  
 gradient-elution, apparatus for, 1627.  
 value of, 1624.
- liquid - liquid**,  $R_M$  - composition relationships in, 3295.
- peak broadening** in, study of, 2776.
- preparative**, apparatus for, 428.
- sequential washing** in, apparatus for, 1040, 1041.
- stream splitter** for, 1628.
- use of high inlet pressures** in, 2775.
- Chromatography, gas**, addition of adsorption-reducing material in, 442.  
 automated, adaptation of apparatus for, 2263.  
 calibration in, precision of, 1057.  
 carrier-gas in, effects of, 439.  
 programming of inlet pressure of, 3305.  
 collection of  $^{14}\text{CO}_2$  from a H-flame detector, 449.  
 of fractions in, direct transfer to  $\text{AgCl}$  i.r. cell or NMR spherical micro-cell, 448.  
 columns for, alkali-metal chlorides and nitrates as, 1063.  
 alumina modified by  $\text{Na}_3\text{PO}_4$  or  $\text{Na}_2\text{SO}_4$  as, 2797.  
 for pesticide analysis, 2793.  
 hydrocarbon polymers as, micro-pore structure of, 1641.  
 improvement in sensitivity of, by addition of Dowling Corning silicone fluid, 1066.  
 method of flow control for coating of, 2790.  
 open-tubular, equation for HETP of, 2799.  
 porous-layer open-tubular, 2267.  
 properties of, 1061.  
 support-coated glass capillary, with optional stationary phases, 2791.  
 continuous, technique of, 437.  
 coupled with mass spectrometry, cause of loss of resolution in, 3312.  
 device for, 2802.  
 review, 2803.  
 detection in, apparatus for, 1645.  
 by catalytic combustion, 1070P.  
 by thermal conduction, theory of cell balance in, 1643.  
 electron-capture, cleaning procedure for, 446.  
 flame ionisation, effluent splitter for, 444.  
 use of  $^{63}\text{Ni}$  source for temp. up to  $400^\circ$ , 445.  
 flame-emission, limits of, 1072.  
 detectors in, adapter for, 3308.

**Chromatography, gas, detectors in—continued**

- Ar-ionisation, variation of response with polarising voltage, 3309.
- d.c. discharge spectral emission, 2274.
- electrodeless discharge as, 1071.
- <sup>63</sup>Ni electron-capture, cleaning of, 2273.
- piezoelectric crystal as, use of HgBr<sub>2</sub> as coating for, 1073.
- polarogr., 2276.
- radio-frequency, for permanent gases, 2275.
- theory of Ar and He, 1069.
- thermal-conductivity, cause of anomalous response of, 3310.
- response in gases of low conductivity, 2271.
- diagnosis of faults in, 2800.
- fatty acid ester - hydrocarbon retention index correlation in, 454.
- high-pressure, technique of, 1642.
- identn. of effluents from, by elementary analysis, 1899.
- of peaks in, by pyrolysis and further GLC, 452.
- increase of resolution in, by differentiation of detector signal, 3311.
- influence of temp. on retention indices, 709.
- injection of sample in, apparatus for on-column, 1059.
- automatic, device for, 2266.
- instrumentation in, report of symposium on, 2787.
- integration of fractionation with TLC, 1095C.
- isotopic exchange simult. with sepn. in, 451.
- measurement of peaks in, detmn. of error in, 1644, 2278.
- of small time-intervals in, 1646.
- multi-column, switching valves for, 2265.
- system for, 438.
- use of columns of different diameter in, 2268.
- of irradiated compounds, device for sample-injection in, 1640.
- use of interrupted elution in, 1638.
- abnormal behaviour of N and Kr in, 1639.
- evaluation of molecular sieves as, 441.
- peak generator for, 2277.
- peak sepn. in, effect of tailing on, 453.
- preparative, two-stage, technique of, 3304.
- processing of results in, by computer, 1074.
- programmed-temp., apparatus for, 3302P.
- puncture-cap technique for, 1058.
- pyrolysis, applications of, review, 1637.
- pre-column reactor system for, 2789.
- review, 1060.
- study of kinetics of thermal decomposition by, 524.
- reaction-, application of catalysis in, 455.
- recording in, electronic digital integrator for, 447.
- report of conference on, 3C.
- of discussion group of Institute of Petroleum, 529.
- reporting of results in, specification for, 1056.
- sampling of gases for, device for, 440.
- stationary phases for, camphoric acid esters as, 3077.
- comparison of, 2795.
- equivalence of, with same concn. of polar groups, 1067.
- evaporation of, 1068.
- FFAP as, 726.
- 2-hexadecylnaphthalene, 443.
- higher alkanes as, 710.
- inorg. salts as, 2796.
- mass spectrom. and thermogravim. examination of, 2804.
- 2'-palmitonaphthone as, 443.
- polyesters as, 1065.
- review of, 3307.

**Chromatography, gas, stationary phases for—continued**

- tetrakis(hydroxyethyl)ethylenediamine as, 2512.
- TL(I) nitrate - ethanediol as, 1916.
- supports for, glass beads as, 2269.
- molecular sieves as, abnormal behaviour of N and Kr in, 1639.
- evaluation of, 441.
- porous glass as 3306.
- porous polymer beads as, 2794.
- PTFE as, for polar compounds, 1064.
- requirements for, 1062.
- terephthalic acid as, adsorptive properties of, 2270.
- transference of groups of compounds to another column, device for, 2798.
- use of computers in, 2801, 3313.
- of pre-columns as subtractors in, 2792.
- water vapour as carrier gas in, 1317.
- Chromatography, ion-exchange**, detection in, derivative method for, 3315.
- influence of temp. on, 542.
- Chromatography, paper**, bibliography (1961 to 1965), 3294.
- detection in, by neutron activation, interference by elements in paper, 1704.
- with I vapour, sensitivity of, 1630.
- detmn. of exchange capacity of papers in, 431.
- of trace elements in paper for, by neutron activation, 432.
- inorg., ion-exchange behaviour of paper in, 1113, 2257.
- pptn. of cations on SrCrO<sub>4</sub>-impregnated paper, 10.
- relationship with separability on cellulose columns, 2256.
- report of conference on, 2C.
- size relation between spots and their autoradiograms, 1632.
- solvent extraction in, 3296.
- u.v. scanner for, 1631.
- use of NH<sub>4</sub> molybdophosphate-impregnated paper in, 552.
- of temp. gradient in, 1047.
- Chromatography, thin-layer**, apparatus for, 1053.
- application of bio-autography in, 435.
- bibliography (1961 to 1965), 3294.
- detection in, applicator for, 1051, 2260.
- by light-absorption, theory of, 2261.
- i.r. spectroph., prepn. of pellets for, 1636.
- development of plates under N, apparatus for, 434.
- device for solvent evaporation for, 2786.
- effect of initial solvent on mobility in, 1054.
- elution technique for, 1634.
- inorg. use of chelating agents in, 20.
- method for observing progress of separation in, 1049.
- micro-apparatus for, 3297.
- of plant extracts, spray reagent for, 2072.
- on microscope slides, applications of, 3298.
- preparative, technique for, 2258.
- use of dye in plates, 3301.
- presentation of results in, proposals for, 2780.
- recording in, on film under u.v. light, 436.
- scanner for radioactive streaks in, 2808.
- report of conference on, 2C.
- role of solvent vapour in, 2259.
- sample application in, automated, 3299.
- device for, 2783.
- saturation chamber for, 2784.
- scanning in, device for, 3300.
- solvents for, fluorohydrocarbons as, 1055.
- standardisation of silicic acid for, 1633.
- of terminology of, 2779.



**Chromatography, thin-layer—continued**

- sublimation apparatus for, 1635.
- technique of 'Moscow' method of, 2785.
- use of parallel strips of different adsorbents on a single plate in, 1052.
- of precoated alumina sheets in, 1050.
- of ready-made plates in, 2781, 2782.
- of very thin cellulose plates in, 433.
- Chromium, analysis, spectrogr.**, 2999.
- concentrate of, detmn. of P in, ion-exchange chrom., 1834.
- detmn., atomic-absorption spectrogr., interference of Fe in, 3020.
- atomic-fluorescence spectrogr., 33.
- in biol. materials, simult. with Ca, Cu, Mg and Mn, spectrogr., elimination of interference in, 285.
- in fuel ash, photom., 3044.
- in minerals, ores or rocks, spectrogr., 650.
- in natural water, atomic-absorption spectrogr., 2228.
- of As in, photom., 1209.
- of Cr<sup>II</sup> in presence of Cr<sup>III</sup>, in Fe-free slags, volum., 648.
- of Cr<sup>III</sup> in presence of Al or Fe<sup>III</sup>, complexom., 2338.
- polarogr., 1238.
- of Cr<sup>VI</sup>, by kinetic method, 124.
- of Pb and Zn in, polarogr., 1125.
- of N in, by Kjeldahl method, 652.
- of O in, comparison of methods for, 653.
- u.v. spectrogr., 2446.
- Chromium, organic complexes of**, detmn., in drilling fluids, photom., 1949.
- tris(acetylacetonato)chromium(III), concn. of metal acetylacetonates in, by zone-melting, 1854.
- Chromium, reagents for**, 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid, 649.
- diphenylcarbazine, 650, 1949, 2439.
- Chromium ores**, detmn. of Al in, complexom., 651.
- of CaO in, complexom., 1239.
- Chromium(III) oxide**, detmn., in faeces, wet-digestion method for, 3132.
- errors during ignition of, in presence of KI, 2334.
- Chromium(VI) oxide**, detmn. of Cr<sup>III</sup> and Fe in, spectrogr., 649.
- Chromotropic acid**, bis-diazoarsono-deriv. of, detmn. of As and N in, 1943.
- detmn., volum., 1159.
- Chronoamperometry**. (See also *Polarography*.)
- use of tubular Hg-film electrodes, equation for, 502.
- Cinchona alkaloids**, TLC of, 1492, 3196.
- Cinnamic acid**, deriv. of, analysis of mixtures of, by decarboxylation, 2538.
- ,  **$\alpha$ -benzamido-*o*-chloro-**, isonicotinohydrazide, detmn., 246.
- ,  **$\alpha$ -benzamido-*p*-dimethylamino-**, isonicotinohydrazide, detmn., complexom. or gravim., 362.
- , **4-methoxy-**, detmn., in blood serum, spectrogr., 2012.
- Citrate**, detmn., in blood plasma and urine, spectrogr., 826.
- Citronella**, detmn. in citronella oil, volum., 2559.
- Citrulline**, detmn. in sweat, paper chrom. - colorim., 2076.
- $\alpha$ -diketone deriv. of, colour and fluorescence reactions of, 2065.
- Citrus fruits**, detection of biphenyl and 2-phenylphenol on, by solvent extraction - TLC, 385.
- detmn. of biphenyl and 2-phenylphenol on, gas chrom. - spectrogr., 1561.
- of Temik in, column chrom. - spectrogr., 1562.

- Citrus oils**, detmn. of organophosphorus pesticides in, by GLC, 1560.
- Citrus peel**, detmn. of biphenyl, 2-phenylphenol and diphenylamine in, by TLC, GLC and spectrofluorimetry, 2188.
- Clay**, detmn. of V in, by solvent extraction - spectrogr., 2432.
- polarogr. behaviour of, 1890.
- Clinical analysis**, accuracy and precision in, 280.
- application of statistics to diagnostic-test results in, 791.
- detmn. of anions and cations in, potentiom., review, 794.
- Clove oil**, detmn. of eugenol in, spectrogr., 1958.
- Coal**, analysis, by pyrolysis - thermogravim., 1950.
- detmn. of Ca in, atomic-absorption spectrogr., 192.
- of F in, photom., 692.
- of minerals in, i.r. spectrogr., 2488.
- of N and S in, 2490.
- of S in, volum., 260.
- of Zn in, spectrogr., 690.
- Coal ash**, detmn. of SiO<sub>2</sub> in, volum., 2489.
- of SO<sub>4</sub><sup>2-</sup> in, spectrogr., 1292.
- Coal tar**, analysis of gases from cracking of, 1369.
- review, 1368.
- Cobalamin**, detmn., spectrogr., 1479.
- , **cyano-**, detmn., by isotope dilution, 925.
- Cobalt**, adsorption of, on cellulose, 1154.
- complexes of Co<sup>III</sup>, hexa-ammine-, detmn., gravim., 2477.
- paper chromatography of, 162.
- with tributylamine - citrate or tartrate, solvent extraction of, 3017.
- detmn., atomic-absorption spectrogr., interference of Fe in, 3020.
- in Co - Ni magnetic films, photom., 3029.
- in Kovar alloy, by ion exchange, 3030.
- in natural water, spectrogr., 1014.
- in presence of Cu and Zn, spectrogr., 550.
- of Ni, by internal electrolysis, 674.
- in rare-earth molybdates, polarogr., 3028.
- in sea water, by co-pptn. with Fe and Mn, spectrogr., 3280.
- in steel, spectrogr., 1878.
- of Bi in, photom., 1280.
- of Co<sup>II</sup>, amperom., 672.
- of <sup>58</sup>Co and <sup>60</sup>Co in nuclear reactor coolants, by solvent extraction - gamma-counting, 420.
- photom., 1879, 2478.
- sepn., from interfering metals, by TLC, and detmn., reflectance-spectrogr., 2341.
- from Pd and detmn., gravim., 680.
- Cobalt, reagents for**, 1-benzoyl-4-phenylthiosemicarbazide, 2478.
- (dithiocarboxy)iminodiacetic acid, tri-K salt, 1878.
- hydroxyiminobenzotetronic acid, 680.
- 3-methoxy-2-nitrosophenol, 1014.
- oxine blue, 550.
- picolinaldehyde 2-quinolyldiazine, 2341.
- Cobaltates(III)**, hexacyano-, detmn., 1870.
- nitro-complexes of, sepn. and identn., on diethylaminoethylcellulose, 1279.
- Cobra venom**, sepn., of constituents of, by thin-layer and paper chrom., 3179.
- Cocaine**, identn., microscopic, 2697.
- Coconut oil**, detmn. of lubricants from polystyrene plastic containers in, gravim. and chrom., 3260.
- Codeine**, detmn., in pharm. prep., simult. with ephedrine, ion-exchange chrom. - volum., 2682.
- Codeine salts**, detmn., volum., 2129.

- Coffee**, roasted decaffeinated, detmn. of caffeine in, non-aq. potentiom., 3253.  
identn. of pyridine-deriv. constituents of aroma complex of, 963.
- Coins**, Roman Imperial, study of debasement of, 51.  
sampling of, for qual. analysis, 1117.
- Coke**, detmn. of N and S in, 2490.
- Colchicine**, detmn., simulat. with demecolcine, thin-layer chrom. - spectrogr., 354.
- Colistin**, identn., in presence of polymyxin B, by TLC, 922.
- Collagen**, analysis, i.r. spectrogr., compared with i.r. total reflectance spectrogr., 2589.
- Colorimetry**, dipping instrument for, 487.
- Complexans**, alanine deriv. as, 2327.  
analysis of mixtures of, volum., 233.
- Computers**, applications of, 1735.  
in calculating composition of equilibrium mixtures, 531.  
for solution of simultaneous equations, 2851.
- Conferences and symposia, reports of**, Fourth International Conference on Separation Methods. October 1967, Heidelberg, Germany, 3.
- Gas Chromatography of Amine Drugs. December 1967, Rome, 1096.
- International Drug Symposia: Pharmacopoeias and International Co-operation in Drug Standardisation; Alkaloids and Related Bases. October 1967, Washington, D.C., 1.
- Proceedings of the 79th Annual Meeting of the Swiss Society for Analytical and Applied Chemistry, September 1967, Geneva, 1095.
- Quantitative Electron-probe Micro-analysis. June 1967, Gaithersburg, Md., U.S.A., 1097.
- Symposium on mass spectrometry. July 1967, Enfield, Middlesex, 2849.
- Third International Symposium on Reproducibility in Paper and Thin-layer Chromatography. October 1967, Liblice, Czechoslovakia, 2.
- Coolants**. (See *Nuclear reactor coolants*.)
- Copaiba**, identn. of sesquiterpenes in, i.r. spectrogr., 1372.
- Copolymers**, butadiene - isoprene, analysis, by NMR, 1981.  
butadiene - styrene, analysis, by NMR, 1981.  
sepn. of constituents of, by solvent extraction, 3113.  
detmn., in latex paints, i.r. spectrogr., 782.  
ethylene - vinylpyrrolidone, relation of m.p. and branching in, 2571.  
of unsatd. polyesters, detmn. of double-bonds derived from fumarate in, polarogr., 3112.  
vinylidene chloride - vinyl acetate, detmn. of pentad and hexad concn. in, by PMR, 1390.
- Copper**, complexes of, detmn. of Cu in, X-ray spectrogr., 1145.  
with  $\text{NH}_3$  and amines, polarogr. study of, 46.  
detmn., amperom., 2864, 2883.  
atomic-absorption spectrogr., interference of Fe in, 3020.  
salt effects in, 44.  
by reduction by Zn or Fe, retardation of cementation in, 1141.  
complexom., 1774.  
gravim., 246, 1773, 2881.  
in biol. materials, simulat. with Mg, Ca, Mn and Cr, flame spectrogr., elimination of interferences in, 285.  
spectrogr., 798.  
in cuprite and tenorite in presence of metallic phase, 2356.  
in lead metallurgical dusts, photom., 1144.
- Copper**, determination—continued  
in materials for phosphors, anodic-stripping voltamm., 2336.  
in minerals, ores or rocks, as metal, oxide and sulphide, 1140.  
in presence of Ag, potentiom., 1780.  
and Tl, amperom., 1123.  
in skin, by neutron activation, 282.  
in sugar, polarogr., 370.  
of Al in, spectrogr., 569.  
of Bi in, complexom., 2357.  
spectrogr., 2886.  
of  $\text{Cu}^I$  and  $\text{Cu}^{II}$  in one sample, potentiom., 1147.  
of Au and Ag in, spectrogr., 48.  
of Fe in, spectrogr., 677.  
of Re in, polarogr., 570.  
of Si in, spectrogr., 2885.  
of Te in, polarogr., 1236.  
potentiom., 1147.  
spectrogr., effect of Si on, 45.  
spectrogr., 550, 567, 568, 1142, 1775, 1776, 2882.  
pptn. of, as tellurate, study of, 2355.  
sepn. from interfering metals by TLC, and detmn. reflectance spectrogr., 2341.
- Copper, reagents for**, 4-aminobenzoic acid, 1773.  
 $\alpha$ -benzamido-*o*-chlorocinnamic acid isonicotinohydrazone, 246.  
2,2'-bicinchoninic acid, 1144, 1161.  
dalzin, 2864.  
dibenzylthiocarbamate, 798.  
6,7-dihydro-5,8-dimethyldibenzo[b,j][1,10]-phenanthroline, 1775.  
2,3-di-2-pyridylquinoxaline, deriv. of, 568, 2882.  
di-8-quinolyl disulphide, 1143, 1162.  
1,2-di(thiocarbamoyl)hydrazine, 2864.  
1-hydroxy-3-methyl-1-phenyl-2-thiourea, 2881.  
[3-(1-methyl-2-piperidyl)-2-pyridylazo]naphthalene-1,6-diol, 1142.  
4-[3-(1-methyl-2-piperidyl)-2-pyridylazo]-resorcinol, 1142.  
monalzin, 2864.  
oxine blue, 550.  
picolinaldehyde 2-hydroxyanil, 1776.  
picolinaldehyde 2-quinolylhydrazine, 2341.
- Copper alloys**, detmn. of Si in, spectrogr., 2885.  
of S in, by combustion - volum., 1228.  
electron-probe micro-analysis of Cu - Ni, effect of atomic number in, 47.
- Copper(I) chloride**, detmn., volum., 566.
- Copper salts**, detmn. of Zn in, concn. by co-pptn. for, 2884.
- Copper sulphide**, pulps, detmn. of Cu in, X-ray spectrogr., 1146.
- Coriander oil**, analysis, by GLC, 1956.
- Corticosteroids**, detmn., in adrenals, by GLC, computer-programmed, 3153.  
in blood plasma, fluorim., 849.  
sepn. from urine, by sequential solvent extraction, 311.
- Corticosterone**, detmn., by temp.-programmed GLC, 2637.
- Cortisol**. (See *Hydrocortisone*.)
- Cortisone**, identn. of pseudopolymorphs and true polymorphs in, by i.r. spectrogr. and thermomicroscopic methods, 2139.
- Corynoxime**, TLC behaviour of, 3204.
- Cosmetics**, detmn. of glycerol in, by GLC, 1375.  
of hydroperoxides in, diagnostic agents for, 2587P.  
of Fe in, photom., 2561.  
of propane-1,2-diol in, by GLC, 1374.  
of volatile alcohols and  $\text{H}_2\text{O}$  in, by GLC, 1373.  
hair-waving prepn., analysis, 770.

- ottonseed**, detmn. of neodecanoic acid in, by TLC of methyl ester of, 985.
- oumaphos**, detection, in urine, by TLC, 1424.
- ounters**, beta-, design of flow-through apparatus for, 2848.
- liquid-scintillation, detmn. of absolute activities of radioisotopes with, 3349.
- high-sensitivity, design of, 3348.
- ounting**, radiation, comparison of procedures for, 3357.
- scintillation, channel selector for single-channel pulse-height analyser, 1710.
- detmn. of true mid-point in, 513.
- liquid-correction for quenching in, computer programs for, 3351.
- gelation procedure for, 514.
- increase of efficiency of, by using 1,4-bis-(5-tolyloxazol-2-yl)benzene, 3354.
- reatine**, detmn., in urine, enzymic - spectroph., 3159.
- reatinine**, detmn., in blood and serum, spectroph., improved heat-clot method of extraction for, 857.
- in blood serum and urine, automated, 858.
- of constancy of 24-hour excretion in urine of, 317.
- resol**, isomers of, paper chromatography of, after coupling with *p*-nitroaniline, 2532.
- Cresol, 2,6-di-*t*-butyl-**, detection, in fats, by TLC, spray reagent for, 1553.
- detmn., in polyethylene, by GLC, 270.
- semi-quant., ring colorim., 955.
- pent-3-en-2-yl-**, GLC of, 1346.
- ryolite**, analysis of mixtures with  $Al_2O_3$ , by DTA, 1796.
- crystallisation**, column, apparatus for, study of efficiency of, 1031.
- fractional, technique for, 1030.
- cucurbitacin B**, sepn. from 23,24-dihydrocucurbitacin B, paper or thin-layer chrom., 850.
- cupferron**, detmn., volum., 9.
- curium**, sepn. from Am, by ion exchange, 1184.
- from other fission products, by solvent extraction, 1816.
- yanide**, detmn. of free and total, in industrial wastes, review of methods for, 419.
- spectroph., 1817, 2866.
- cyano-compounds**, detmn., spectroph., 2866.
- cyanuric acid**, detmn., in presence of impurities, potentiom., 1974.
- yclamic acid**, Ca salt, detmn., colorim., 2718.
- Na salt, detmn., colorim., as cyclohexylamine, 2718.
- in rat's excreta,  $^{14}C$ -labelled, by GLC - radiom., 2187.
- yclandelate**, detmn., in formulations, u.v. spectroph., problems of, 3224.
- yclitols**, amino-, GLC of trifluoroacetyl deriv. of, 305.
- yclohexane, hexachloro-**, gamma-,  $^{14}C$ -labelled, detmn. of loss in soil of, during sample prepn., 2206.
- detmn., in fats and fatty oils, by GLC, after clean-up on alumina column, 2196.
- in natural water, by GLC, 2230.
- in pesticides, in presence of DDT isomers, by TLC - X-ray spectrogr., 1587.
- in rice, in presence of aldrin, malathion and DDT, by GLC, 960.
- in vegetable oils, by extractive distillation and GLC, 1561.
- sepn. from cyclodienes and DDT analogues, by GLC, 2217.
- Cyclohexanone**, 2,6-disubstituted deriv. of, analysis, by GLC - TLC, 3C.
- Cyclopenthiiazide**, detection, in presence of 4-amino-6-chlorobenzene-1,3-disulphonamide, by TLC, 3233.
- Cyclophosphamide**, detmn., spectroph., 1526.
- Cycrimine**, detmn., in pharm. tablets, non-aq. volum., 2152.
- Cynarin**, detmn., in fruit juice or jam, simult. with chlorogenic and caffeic acids, by TLC, 2727.
- Cysteic acid**, sepn. from its Se analogue, by GLC of silylated deriv., 3170.
- Cysteine**, detmn., coulom., 3073.
- in presence of ascorbic acid, potentiom., 3171.
- review of methods for, 326.
- identn., spectroph., based on rate of reaction with formaldehyde, 3173.
- sepn. from its Se analogue, by GLC of silylated deriv., 3170.
- N-acetyl-**, detmn., in presence of ascorbic acid, potentiom., 3171.
- Cysteinesulphinic acid**, sepn. from its Se analogue, by GLC of silylated deriv., 3170.
- Cystine**, detmn., in urine, spectroph., 2081.
- in wool and hair hydrolysates, volum., 3172.

## D

**2,4-D**, detmn., in mixtures with related herbicides, by GLC of methyl esters, 2739.

in oysters, by GLC, 299.

**2,4-DB**, detmn., in mixtures with related herbicides, by GLC as methyl esters, 2739.

**DDE**, sepn. from related organochlorine pesticides, by GLC, 2217.

**DDT**,  $^{14}C$ -labelled, detmn. of loss in soil of, during sample prepn., 2206.

detmn., in fats and fatty oils, by GLC, after clean-up on alumina column, 2196.

in presence of gamma-BHC, by TLC - X-ray spectrogr., 1587.

in rice, in presence of aldrin, gamma-BHC and malathion, by GLC, 960.

sepn. from related organochlorine pesticides, by GLC, 2217.

**DNA**. (See *Nucleic acid, deoxyribo-*.)

**DNOC**, detmn., in fruits, by GLC, clean-up procedure for, 2192.

in mixtures of phenolic pesticides, by GLC, 2220.

**DTA**. (See *Thermal analysis, differential*.)

**Decamethonium iodide**, detection, in biol. tissues, in presence of other muscle-relaxants, ion-exchange spectroph., 809.

**Dehydroacetic acid**, detmn., in foods, by solvent extraction, spectroph., 1551.

**Dehydroascorbic acid**, identn., in presence of ascorbic acid, by TLC, 903.

**Demecolcine**, detmn., simult. with colchicine, thin-layer chrom. - spectroph., 354.

**Demeton-S-methyl SS-dioxide**, sepn. from vamidothion, chrom. on formamide-impregnated paper, 961.

**Density**, measurement of small differences of, 2238.

**Dental enamel**. (See *Teeth*.)

**Dentifrices**, detmn. of humectants in, by GLC, 2560.

**Detergents**. (See also *Surfactants*.)

detmn. of efficiency of, by  $^{14}C$ - and  $^3H$ -labelled soiling, 1381.

non-ionic, detmn., modification of Greff and Setzkorn method for, 3098.

**Deuterium**, detmn. in org. compounds, mass spectrom., 698.



- Deuterium oxide**, detmn., in water mixtures, by  $^{19}\text{F}$  NMR, 1132.
- Dextromethorphan**, detmn., in blood serum and urine, thin-layer chrom. - fluorim., 2017.
- in cough syrups, 1C.
- Diamorphine**, injection of, assay of, 1496.
- Diazepam**, detmn., in blood and urine, gas chrom., 812.
- in urine, thin-layer chrom. - i.r. spectroph., 2015.
- identn., in urine, by TLC, 1416.
- Diazinon**, detmn., by TLC, spray reagent for, 406.
- in kale, solvent extraction method for, 2193.
- Dibenz[a,h]anthracene**, detection, in milk, paper chrom., 1545.
- Dicamba**, and metabolites of, sepn. from plant tissue and detmn., by TLC - GLC, 818.
- Dicarboxylic acids**,  $\alpha\omega$ -,  $\text{C}_2$  to  $\text{C}_9$ , detmn., paper chrom., 724.
- cyclic anhydrides of, detection, by TLC, after reaction with *p*-anisidine, 727.
- identn., by TLC - DTA, 1929.
- Dichlorprop**, detmn., in mixtures with related herbicides, by GLC as methyl esters, 2739.
- Dichlorvos**, detection, in poisoned animal tissues, by TLC, 2024.
- detmn., in aq. soln., colorim., 993.
- in cereals, column chrom. - spectroph., 2746.
- Dicloran**, detmn., in plant extracts, by TLC, 1583.
- Dicoumarol**, detmn., in blood plasma, by solvent extraction - spectroph., 2019.
- photom., 1525.
- Dieldrin**,  $^{14}\text{C}$ -labelled, detmn. of loss of, in soil, during sample prepn., 2206.
- solvent extraction from soil, comparison of methods for, 2744.
- detmn., in fats and fatty oils, by GLC, after clean-up on alumina column, 2196.
- metabolite of, structural analysis of, 2023.
- sepn. from BHC and related organochlorine pesticides, by GLC, 2217.
- from pentachlorophenol, in wood preservative, ion-exchange chrom., 1585.
- Diethylcarbamazine citrate**, detmn., in pharm. tablets or soln., colorim., 3232.
- Digitoxin**, detmn. of mol. extinction coeff. of, 921.
- Digoxin**, detmn. of mol. extinction coeff. of, 921.
- Dimefox**, detmn. of rate of hydrolysis of, by GLC, 1588.
- Dimethoate**, detection, in poisoned animal tissues, by TLC, 2024.
- sepn. from plant extracts by TLC and detmn. of P, spectroph., 3268.
- from related organophosphorus insecticides, paper or thin-layer chrom., 961.
- Dinex**, detmn., in fruits, by GLC, clean-up procedure for, 2192.
- in mixtures of phenolic pesticides, by GLC, 2220.
- Dinobutan**, detmn., in fruits and vegetables, column chrom. - spectroph., 3250.
- Dinosam**, detmn., in fruits, by GLC, clean-up procedure for, 2192.
- Dinoseb**, detmn., in fruits, by GLC, clean-up procedure for, 2192.
- in mixtures of phenolic pesticides, by GLC, 2220.
- Diols**, acetylation of, for GLC, 2041.
- 1,3-Dioxolan-2-one**, **4-methyl-**, detmn., by GLC, 254.
- Diphenhydramine**, detection, spectrofluorim., 2698.
- detmn. in cough mixtures by gel filtration - spectroph., 359.
- hydrochloride, deriv. of, identn., i.r. spectroph., 360.
- identn., by crystal formation 2697.
- Diphenylamine**, detmn., in citrus peel, in presence of biphenyl and 2-phenylphenol, by TLC - GLC and spectrofluorimetry, 2188.
- in mixtures with aniline, potentiom., 746.
- Diphenylpyraline**, detection, spectrofluorim., 2698.
- Diphesatin**. (See *Oxyphenisatin diacetate*.)
- Dipicolinic acid**. (See *Pyridine-2,6-dicarboxylic acid*.)
- Dipyron**, detmn., in aq. soln., spectroph., 932.
- in pharm. prep., in presence of piperylon, column chrom. - spectroph., 3217.
- in veterinary injections, spectroph., 1516.
- identn., by TLC, 3218.
- Distillation**, azeotropic, device for, 2773.
- fractionating columns for, use of vibration for increasing efficiency of, 1028.
- Disulfiram**, metabolites of, detmn., in urine, chromom., volum. or colorim., 817.
- Dithizone**, detmn., potentiom., in acetonitrile, 2539.
- Dolomite**, analysis, 3042.
- Dopamine**, detmn., in urine, simult. with adrenaline and noradrenaline, review of methods for, 3157.
- Drilling fluids**, detmn. of organochromium compounds in, photom., 1949.
- Dropicidol**, detmn., in pharm. prep., in presence of fentanyl citrate, spectroph., 3219.
- Drugs**. (See also *Pharmaceutical analysis*. Groups of drugs will be found under names indicative of their pharmacological action e.g. *Tuberculostatics*, or under the parent compound e.g. *Phenothiazine*, deriv. of.)
- detmn. of  $\text{H}_2\text{O}$  in, by GLC, 2127.
- forensic problems in GLC of, 1096C.
- Drying**. (See *Freeze-drying*.)
- Dust**, atmospheric, detmn. of olefins in, spectroph., after oxidative treatment, 1596.
- of polycyclic aromatic hydrocarbons in, thin-layer chrom. - spectrofluorim., 1003.
- filter for, 1621P.
- sampling and automatic apparatus for measurement of, 2221P.
- Dyes**, for food, amendment to B.S.I. specification for Ponceau MX, 2719.
- and drugs, sepn., paper chrom., 381.
- identn., in drugs, paper chrom., 1490.
- triazine azo-, detmn., in effluents, polarogr., 1612.
- Dyes, listed under commercial or common names**, with corresponding Colour Index (Second Edn.) designations under which references will be found.
- Alcian blue 8GX. *Ingrain Blue 1*.
- aniline blue. *Acid Blue 20*.
- aniline green. *Basic Green 1*.
- Black PN. *Food Black 1*.
- Brentamine fast black K. *Azoic Diazo Component 38*.
- Calcon. *Mordant Black 17*.
- Chrome Azurol S. *Mordant Blue 29*.
- Coomassie brilliant blue. *Acid Blue 83*.
- crystal violet. *Basic Violet 3*.
- D & C Red No. 8. *Pigment Red 53*.
- D & C Red No. 9. *Pigment Red 49*.
- D & C Red No. 17. *Solvent Red 23*.
- D & C Violet No. 2. *Solvent Violet 13*.
- Eriochrome black T. *Mordant Black 11*.
- Eriochrome cyanine R. *Mordant Blue 3*.
- gallocyanine MS. *Mordant Blue 10*.
- methylene green. *Basic Green 5*.

**Yyes—continued**

Naphthol AS-SG. *Azoic Coupling Component* 13.  
 Nile blue A. *Basic Blue* 12.  
 quinoline yellow. *Food Yellow* 13.  
 Remazol brilliant blue R. *Reactive Blue* 19.  
 Rhodamine B. *Basic Violet* 10.  
 Rose Bengal. *Acid Red* 94.  
 Solochrome cyanine R. *Mordant Blue* 3.  
 Sudan black. *Solvent Black* 3.  
 Titan yellow. *Direct Yellow* 9.  
 Variamine blue B. *Azoic Diazo Component* 35.

**Yyes, listed under designations in the Colour Index (Second Edition, 1956).**

Acid Blue 20, for staining proteins, 2083.  
 Acid Blue 83, as stain in electrophoresis, 2282.  
 Azoic Coupling Component 13, detmn., oscillo-polarogr., 261.  
 Azoic Diazo Component 35, as reagent for amino-acids, 3167.  
 Azoic Diazo Component 38, for detmn. of ascorbic acid, 901.  
 Basic Blue 12, for detmn. of B, 2210.  
 Basic Green 1, for detection of org. P compounds, 1409.  
 Basic Green 5, as reagent for Re, 2459.  
 Basic Violet 3, differentiation from methyl violet, paper chrom., 2163.  
 for detmn. of Tl, 1998.  
 Basic Violet 10, as reagent for Sb, 1960.  
 for detmn. of pyridazinone deriv., 995.  
 Direct Yellow 9, use of active component of, for detmn. of Mg, 574.  
 Food Black 1, B.S.I. specification for, 954.  
 Food Yellow 13, sepn. from foods, paper chrom., and identn. by u.v. and fluorescence spectra, 1550.  
 Ingrain Blue 1, for detmn. of mucopolysaccharides, 1428.  
 Mordant Black 11, as reagent for Mg, 675, 2892.  
 Mordant Blue 3, as reagent for Al, 590, 1010.  
 for Ga, In or Tl, 1166.  
 Mordant Blue 10, as reagent for Zr, 2963.  
 Mordant Blue 29, as indicator for F<sup>-</sup>, 2453.  
 as reagent for Al, 2468.  
 for Ga or In, 1167.  
 for In, 78.  
 for Fe<sup>III</sup>, 140.  
 for Pd, 682.  
 Pigment Red 49, Ba salt, detmn. of 4-(4-chloro-6-sulpho-*m*-tolylazo)-1-naphthol in, spectroph., 262.  
 Pigment Red 53, detmn. of 4-(4-chloro-6-sulpho-*m*-tolylazo)-1-naphthol in, spectroph., 262.  
 Reactive Blue 19, for assay of elastase, 2674.  
 Solvent Black 3, for staining lipoproteins, 2089.  
 Solvent Red 23, detmn. of 1-phenylazo-2-naphthol in, spectroph., 263.  
 Solvent Violet 13, detmn. of anthraquinone intermediates in, colorim., 1376.  
**ysprosium**, detmn. of impurities in, spectrogr., 1176.  
 sepn. from Y, by ion exchange, 2394.

**E**

**DTA**, detmn., volum., 1334.  
**dan**. (See *Salicylic acid, acetyl-, 2-diethylaminoethyl ester*.)  
**ffluents**. (See *Industrial wastes*.)  
**gg yolk**, assay of alkaline phosphatase in, spectroph., 946.  
 detection of egg-white in commercial product, spectroph., 947.  
**lastin**, detmn. of desmosine and isodesmosine in, ion-exchange chrom. - spectroph., 882.

**Elastomers**, for hydraulic sealing, identn., by i.r. total reflectance, 2584.

**Electrical conductivity**, adaptation of potentiometric recorder for measurements of, 505.  
 cell for use at high temp. and pressures, 1698.  
 measurement of, cells for, 1701P.  
 circuit for, 1699.

**Electrodes**, anion-selective membrane-, theory and applications of, 491.  
 behaviour of, in dimethyl sulphoxide, 2315.  
 Ca-sensitive, selectivity of, 2370.  
 choice of, for potentiometry and pH detmn., 2320.  
 for coulometric titrations, Ag - AgS and Ag - AgSCN for, 507.  
 for polarography, Hg-coated tubular platinum for flowing streams, 499.  
 for transmission spectral observations during electrolytic consumption of cell reactants, 490.  
 glass, ion-sensitive, variation of e.m.f. of, with time, 1683.  
 properties of system Li<sub>2</sub>O - BaO - (Pr,Nd)<sub>2</sub>O<sub>3</sub> - SiO<sub>2</sub> for PH detum, 1687.  
 graphite-impregnated silicone rubber for voltammetry, 2317.  
 LaB<sub>6</sub> for voltammetry, 2316.  
 Hg-dropping, detmn. of faradaic and capacitor charge at, 1688.  
 NO<sub>3</sub><sup>-</sup>-selective, 625.  
 oxygen, modifications of Mackereth type, 2843.  
 platinum, rotating-disc, construction of, 1684.  
 tubular, for voltammetry in turbulent flow of soln., 2845.  
 Pt - Rh for potentiometry, 1692.  
 K-selective, production of, 2878.  
 Ag indicator, use of, in complexom. detmn. of Ca, 1152.  
 Na-ion sensitive, prepn. of, 560.

**Electrolysis**, current - time equation for, 502.  
 electrode for following the course of a reaction, 490.

**Electron-probe micro-analysis**, absorption correction uncertainty in, 2288.  
 applications of, 1294.  
 to biol. materials, 1097C.  
 reviews, 462, 1097C.  
 computer programs for, 2289.  
 probe-current stabilities in, 2816.  
 use of mass spectrometer in, 3338.

**Electrophoresis**, counter-current, technique of, 2279, 2280.  
 descending density gradient technique for, 1079.  
 paper, dimethyl phthalate as transparency liquid for, 1650.  
 two-dimensional, apparatus for, 1649.  
 thin-layer, agar-gel, micro-modification of, 2806.  
 de-staining of polyacrylamide gels in, 2283.  
 multi-sample applicator for, 457.  
 polyacrylamide gel, macrotome for, 2807.  
 prepn. of polyacrylamide gels for liquid-scintillation spectrometry, 2282.  
 recording scanner for radioactive streaks in, 2808.  
 two-dimensional, procedure for, 2281.  
 use of acrylamide-gel cylinders in, 1077, 1078.  
 of plaster of Paris in, 1651.  
 of polyacrylamide columns in, technique for, 458.  
 of polyacrylamide slabs in, multiple analysis by, 459.  
 of starch-gel blocks under light petroleum, 1076.  
 zone, on a vertical column, 1648.

**Electroplating solutions**, cadmium anodes and CdO for, B.S.I. standard for, 64.  
copper, detmn. of  $\text{SO}_4^{2-}$  in, volum., 1778.  
cyanide, detmn. of Au and Ag in, spectrogr., 2890.  
detmn. of Zn or Cd and alkali-metal cyanide in, complexom., 63.  
nickel, detmn. of metallic impurities in, by ion exchange, 167.  
of org. compounds in, amperom., 166.  
silver, detmn. of Ag in, complexom., 1779.  
zinc, detmn. of Hg, U and Yb in, by neutron activation, 1158.

**Endoxan.** (See *Cyclophosphamide*.)

**Endrin**, detmn., in vegetable oils, by extractive distillation and GLC, 1561.  
sepn. from BHC and related organochlorine pesticides, by GLC, 2217.

**Enthalpimetry.** (See *Volumetric analysis, thermometric.*)

**Enzymes (general references)**, assay, of groups of, automated, 2104.  
detmn. of reaction rates of multiple samples, automated, 344.

**Enzymes, specific**, adenylyl cyclase, assay, paper chrom. - radiom., 1484.  
 $\alpha$ -amylase, assay, spectroph., 345.  
arginase, assay, in blood serum, gel ion-exchange chrom. - spectroph., 347.  
radiom., 2675.

aspartate ammonia-lyase, assay, spectroph., 349.  
cathepsin, assay, in blood serum, polarogr., 346.  
cellulase, assay, fluorim., 1483.

cholinesterase, assay, coulom., apparatus with numerical read-out for, 2670.

in blood plasma, disc electroph. in polyacrylamide gel, 2671.

in blood serum, comparison of acetyl- and butyryl-thiocholine substrates for, 2672.  
spectroph., 2118.

creatine kinase, assay, in blood serum, spectroph., 908, 2114.

cytochrome oxidase, assay, in blood, spectroph., 2112.

dextrin-1,6-glucosidase, assay, diagnostic compounds for, 2673P.

dihydrofolate dehydrogenase, assay, spectroph., effect of substrate decomposition on, 905.

disaccharidase, assay, in intestinal mucosa, spectroph., 2106.

elastase. (See *pancreatopeptidase E*.)

esterases, assay, in blood serum, potentiom., 2669.

glucoamylase, microbial, assay, in presence of  $\alpha$ -amylase, spectroph., 2121.

glucose oxidase, assay, in blood and urine, spectrofluorim., 2113.

glucose-6-phosphatase, assay, in liver, study of, 913.

glucose-6-phosphate dehydrogenase, assay, in mouse haemolysates, gel electroph., 915.

glutamate dehydrogenase, assay, in tissue homogenates, gel-electroph., 2111.

$\gamma$ -glutamyltranspeptidase, assay, electroph., -densitom., 2667.

histaminase, assay, in biol. tissues, spectroph., 339.

histidine decarboxylase, assay, radiom., 348.

hydrolases, assay, column chrom. - colorim., automated, 909.

diagnostic composition for, 2105P.

in blood serum, potentiom., 2116.

**Enzymes, specific—continued**

2-hydroxybutyrate dehydrogenase, assay, in biol. fluids, reagent for, 1481P.

lactate dehydrogenase, assay, gel electroph. on acrylamide applied to microscope slide, 2665.

in blood serum, colorim., 2107.

electroph. on cellulose-acetate strips - densitom., 2110.

in tissue homogenates, electroph., on cellulose acetate strips, 2109.

spectroph., 2108.

leucine aminopeptidase, radiom., with  $^{14}\text{C}$ -labelled leucinamide substrate, 2122.

in blood serum, fluorim., 914.

lipase, assay, fluorim., 910.

in duodenal contents, electrode assembly for measuring time of fat digestion in, 2117.

ornithine carbamoyltransferase, assay, in blood serum, spectroph., 907.

pancreatopeptidase E, assay, fluorim. or colorim., 2674.

in blood, spectrofluorim., 2123.

peroxidase, assay, in blood and urine, spectrofluorim., 2113.

phenyl acetate esterase, assay, in blood serum, volum., 343.

phenylalanine 4-hydroxylase, assay of co-factor, radiom., 906.

phosphatase, acid, assay, in apples, spectroph., 3247.

and alkaline, assay, in blood serum, spectroph., 912.

alkaline, assay, differentiation of intestinal and placental, electroph., 2120.

in blood serum, electroph., on cellulose acetate strips - spectroph., 2119.

use of umbelliferone phosphate as substrate for, 3187.

in egg yolk, spectroph., 946.

paper chrom., 911.

assay, in soil, photom., 986.

phosphogluconate dehydrogenase, assay, in vaginal fluid, spectroph., effect of blood on, 2666.

phosphopyruvate carboxylase, assay, in neonatal rat liver, 2124.

polygalacturonase, assay, in plants, colorim., 306.

proteinases, assay, in flour and proteolytic prep., 904.

ribonuclease, assay, in seminal plasma, ion-exchange chrom., 2115.

transoximinase, assay, in biol. tissues, spectroph., 342.

trypsin, assay, in commercial prep., column chrom. - spectroph., 3188.

in pharm. prep., by caseinolysis and colorim. or potentiom. methods, 942.

tyrosine aminotransferase, assay, ion-exchange chrom. - radiom., 341.

radiom., 340.

uridylyltransferase, galactose-1-phosphate, assay, in red and white blood cells, radiom., 2668.

xanthine oxidase, assay, in biol. tissues, fluorim., 1482.

in blood and urine, spectrofluorim., 2113.

**Ephedrine**, detmn., in compound powders, spectroph., 2134.

in pharm. products, polarogr., 1500.

simult. with codeine, ion-exchange chrom. - volum., 2682.

hydrochloride, detmn., in pharm. tablets, spectroph., 3199.

**Epicatechin**, detmn., in fruits, in presence of catechin, paper chrom. - densitom., 2179.



- pitestosterone.** (See *Androst-4-en-3-one, 17 $\alpha$ -hydroxy-*.)
- guilenin**, sepn. from equilin, column chrom. and u.v. spectroph., 1524.
- , 17 $\beta$ -dihydro-**, sepn. from 17 $\beta$ -dihydroequilin, column chrom. and detmn., u.v. spectroph., 1524.
- rbium**, detmn., in presence of other elements, photom., 599.
- rgocaliferol.** (See also *Vitamin D*.)
- detmn., colorim., 1511.
- of quinol in, colorim., 1576.
- rgometrine**, detmn., in presence of clavine alkaloids, by TLC - spectroph., 3197.
- , methyl-**. (See *Methylergometrine*.)
- rgometrinine**, detmn., in presence of clavine alkaloids, by TLC - spectroph., 3197.
- rgotamine**, tartrate, detmn., in pharm. tablets, in presence of phenobarbitone, column chrom., 1493.
- rythritol tetranitrate**, identn., in pharm. prep., by TLC, 1534.
- rythrocytes**, detmn. of porphyrins in, by solvent extraction - spectroph., 2093.
- sepn. of porphyrins from, by modified Rimington extraction method, 889.
- rythromycin**, A and B, sepn., thin-layer and column chrom., 3209.
- A, B and C, sepn., paper electroph., or by TLC on talc, 2138.
- ssential oils**, revised and new standards of the U.S.E.O.A., 1370.
- thacridine lactate**, detmn. in biol fluids and faeces, spectrofluorim., 1419.
- thanediol**, detmn., in lipids and phospholipids, by GLC as the diacetate, 2041.
- dinitrate, detmn., in air, by GLC, 411.
- thane, 1,1-dichloro-2,2'-bis(4-chlorophenyl)-**. (See *TDE*.)
- thanol**, alcoholimetric tables, for calculation percentage of H<sub>2</sub>O in aq. ethanol, 3255.
- detection of denaturants in, in pharm. prep., by GLC, 1488.
- of ethyl methyl ketone in, colour reaction for, 2704.
- detmn., in blood, by GLC, automated, 2021.
- in blood serum, by GLC, 2609.
- in pharm. prep., by GLC, 2162.
- radiom., with neutron-activated Ag as reagent, 2332.
- , 2-amino-**, detmn., in plants, as 2,4-dinitrophenyl deriv., ion-exchange paper chrom. - spectroph., 3160.
- glycerophosphatides, sepn. of plasmalogenic alkyl - acyl and diacyl forms of, in biol. materials, by TLC, 2628.
- sepn., from 2-methylamino- and 2-dimethylamino-ethanol, by GLC, 835.
- , 2,2',2''-nitrilotri-**. (See *Triethanolamine*.)
- , trichloro-**, detmn., in mixtures with chloral hydrate, trichloroacetic acid and urochloralic acid, spectroph., 298.
- thanolamine.** (See *Ethanol, 2-amino-*.)
- thchlorvynol**, detmn., in urine and blood serum by GLC, 2011.
- ther.** (See also *Ethyl ether*.)
- alkyl 2,3-epoxypropyl, identn., paper chrom., 221.
- , 3-chloro-2-hydroxypropyl**, paper chromatography of, 716.
- thers**, phenolic, detmn. of alkoxy-groups in, by GLC, 1308.
- thinyloestradiol**, detmn., in pharm. prep., fluorim., automated, 939.
- Ethionamide**, identn., by TLC, 1522.
- Ethyl biscoumacetate**, detmn., photom., 1525.
- Ethyl ether**, detmn., in blood, c.s.f. and urine, by GLC, 2016.
- Ethylene**, chloro-deriv. of, analysis, by GLC, 2503.
- Ethylmorphine**, detmn., in compound powders, spectroph., 2134.
- hydrochloride, detmn., volum., 2129.
- Ethylpaverine**, detmn., in aerosol products, spectroph., 2153.
- Eugenol**, detmn., in essential oils, spectroph., 1958.
- Europium**, detmn., in minerals, ores or rocks, by neutron activation, 1174.
- Evaporation**, two-stage falling-film apparatus for, 1029.
- Explosives.** (See also *Propellents*.)
- detmn. of nitrates in, photom., 1399.
- plastic-bonded, detmn. of F in, gravim., 3122.

## F

- Faeces**, analysis of steroids and bile acids in, by ion-exchange - thin-layer chrom., 840.
- detmn. of benhepazone in, fluorim., 2014.
- of Ca in, ion-exchange chrom. - volum., 1993.
- of chromium(III) oxide in, wet-digestion method for, 3132.
- of ethacridine lactate in, spectrofluorim., 1419.
- of lipids, in, by solvent extraction, evaporation and weighing, 2044.
- of proteins in, by Kjeldahl method, 329.
- Farnoguinone.** (See *Vitamin K<sub>2</sub>*.)
- Fats and fatty oils**, analysis, review of physical methods for, 2732.
- autoxidation of, u.v. spectroph. study of the course of, 3259.
- detection of adulteration of, chrom., 2850C.
- of antioxidants in, by TLC, spray reagent for, 1553.
- detmn. of antioxidants in, column chrom. - spectroph., 1544.
- of aromatic polycyclic hydrocarbons in solvents used in extraction of, column - thin-layer chrom. - spectroph., 2734.
- of organochlorine pesticides in, by extractive distillation and GLC, 1561.
- by GLC, 2196.
- of oxidised fatty acids in, by TLC, 392.
- of tocopherols in, thin-layer chrom. - spectroph., 2733.
- identn. of epoxidised glycerides in, by TLC, spray reagent for, 3145.
- partially hydrogenated, sepn. and structural analysis, as methyl esters, column chrom., 983.
- solvent extraction of, apparatus for, 1570.
- vegetable, detmn. of neutral-oil content of, by isotope dilution, 3257.
- Fatty acids.** (For the lower members of the series see *Carboxylic acids*.)
- analysis of hydroxyethylamides of, 3099.
- C<sub>12</sub> to C<sub>22</sub>, methyl esters, sepn., by GLC, 2619.
- C<sub>16</sub> to C<sub>18</sub>, detmn., in vegetable oils, comparison of methods for, 2202.
- C<sub>16</sub> to C<sub>22</sub>, methyl esters, sepn. of paired isomers of, by GLC, effect of structure on, 393.
- cyclopropenyl-, detmn., as methyl esters, on a urea column, 786.
- detection on TLC plates or paper chromatograms, spray sequence for, 1438.
- detmn., in blood serum, paper chrom., 2033.
- in mixtures with glycerides, by GLC, silylation agent for, 2629.
- esterification of, apparatus and method for, 829.
- free, detmn., in blood plasma, colorim., 827.

**Fatty acids**—*continued*

- methyl esters, detection in fats and oils, by urea-complex formation and temp.-programmed GLC, 395.  
 detmn., by GLC, need for calibration in, 1931.  
 column - gas chrom., 1439.  
 structure and retention-vol. relationships in, 2264.  
 sepn., by urea-complex formation, correlation of structure with preferential order of, 394.  
 monoenoic, detmn., of double-bond position in, by oxidation and GLC, 1928.  
 sepn., ion-exchange chrom. - gravim., 982.  
 paper chrom., detecting agents for, 223.  
 TLC of, 2C.
- Feeding-stuffs**, detmn. of amprolium in, by the A.O.A.C. method, treatment of alumina for, 2215.  
 of Br in, photom., 2168.  
 of chlormadinone in, column - gas chrom., 1580.  
 of Cu, Mg and Zn in, atomic-absorption spectroph., 2212.  
 of Mn in, ion-exchange chrom. - spectroph., 987.  
 of  $\text{NO}_2^-$  and  $\text{NO}_3^-$  in, 401.  
 of pesticides in, by A.O.A.C. method, collaborative studies of, 1555.  
 of pyridoxine and inositol in, microbiol., 1581.  
 of vitamin A in, thin-layer chrom. - spectroph., 990.
- Fenfluramine**, detmn., in urine, in presence of norfenfluramine, by GLC, 1421.
- Fennel oil**, analysis, by GLC, 1956.
- Fentany citrate**, detmn., in pharm. prep., in presence of droperidol, spectroph., 3219.
- Ferricyanide**, detmn., coulom., 2464.
- Ferrioxamine**, detmn., in urine, 2653.
- Ferrites**, analysis, methods for, 150.
- Ferrocene**, polarogr. behaviour of, in dimethylformamide, 1747.
- Ferrocyanide**, detmn., potentiom., 1870.  
 study of  $\text{Pb}^{IV}$  acetate as titrant, for, 145.
- Ferromanganese**. (See under *Iron alloys*.)
- Ferroniobium**. (See under *Iron alloys*.)
- Ferrovanadium**. (See under *Iron alloys*.)
- Fertilisers**, analysis, automatic equipment for, 3264.  
 detmn. of B in, spectroph., 2210.  
 of Mo in, atomic-absorption spectroph., 1579.  
 of N in, spectroph., automated, 2211.  
 of P in, volum., 1578.  
 of K in, atomic-absorption spectroph., 2207.  
 u.v. spectroph., automated, 2208.  
 water-sol., analysis, i.r. spectroph., 400.
- Fibres**, i.r. spectrophotometry of, use of laser source in, 2562.  
 microscopic examination of cross-sections of, 3106.
- Fibrinogen**, detmn., in blood, as fibrin, spectroph., 883.  
 by weighing wet fibrin, 330.  
 in blood plasma, spectroph., 884.  
 turbidim., lack of precision of, 2088.
- Fibroin**, silk-, sepn. of peptides from, column chrom., 3C.
- Figs**, identn. of azinphos-methyl in, by TLC and u.v. and i.r. spectrophotometry, 1425.
- Filtration**, gel-, procedure for viscous soln., 2245.  
 tube, for, 2246.  
 ultra-, cell for proteolysis products, 2247.
- Fish**, detmn. of cholesterol in, as aid to characterisation of species of, 2712.
- Fish meal**, detmn. of fat in, comparison of solvent extraction methods for, 2713.

- Fission products**, sepn. from targets and purification of, 26.
- Flame photometry**. (See *Photometry, atomic-emission*.)
- Flame spectrophotometry**. (See *Spectrophotometry, atomic-emission*.)
- Flavan 3,3',4',5,7-pentol**. (See *Catechin; Epicatechin*.)
- Flavone**, deriv. of, applications of, as reagents, 1736.  
 colour reactions for, 891.
- Flavonoids**, TLC of, 3C.
- Flotation agents**, analysis of OPSM by GLC, 3063.  
 detmn. of Al, Be, Ca and Si in, 2486.
- Flour**, analysis of amino-acids in, automated, with Technicon analyser, 945.  
 detmn. of -SH groups in, paper chrom. - radiom., 1539.  
 evaluation, by light reflectance, leucometer for, 371.
- Fluorescence**, correction of decay-time measurements in, 2822.
- Fluoride**, detmn., by distillation - spectroph., 1247.  
 by pptn. exchange, 1860.  
 enthalpim., 1248.  
 in biol. fluids, by diffusion method, effect of silicone-grease sealant on, 2006.  
 in blood serum, ion-exchange chrom. - spectroph., 3133.  
 in bone or urine, by micro-diffusion - spectroph., 807.  
 in chlorides, use of  $\text{LaF}_3$  electrode in, 2454.  
 in dental enamel, by isotopic dilution, 1412.  
 in fluoridated water, comparison of methods for, 1009.  
 in natural water, colorim., 1008.  
 without preliminary distillation, colour reactions for, 1601.  
 potentiom., 1252.  
 use of F-sensitive electrode in, 134.  
 spectroph., 1861.  
 turbidim., 1251.  
 voltamm., 1862.  
 volum., 133, 1249.  
 by use of  $\text{Th}(\text{NO}_3)_4$ , 2452.
- Fluorimetry**, standard for, 1092.
- Fluorine**, detmn., in fluorspar, by photom. titration, 2453.  
 in minerals, ores or rocks, by distillation spectroph., 186, 657.  
 by pyrolytic hydrolysis - volum., 1193.  
 in org. compounds, by O-flask combustion, 700.  
 by solvent extraction - photom., 2498.  
 simult. with C and H, 1296.  
 photom., review, 132.
- Fluorodifen**, detmn., in soya beans, column - gas chrom., 2742.
- Fluorspar**, analysis, 686.  
 detmn. of F in, by photom. titration, 2453.
- Fly species**, identn., in food contamination, 366.
- Foam stabilisers**, analysis of fatty acid 2-hydroxyethylamides, 3099.
- Foods**. (See also *Preservatives*.)  
 analysis, 1967 annual review, 1734.  
 applications of automated liquid chromatography in, 2169.  
 of volatile flavours of, preconcn. of, for GLC 944.  
 detection of nitrosamines in, comparison of methods for, 3242.  
 detmn. of Br in, photom., 2168.  
 of Ca and Mg in, h.f. polarogr., 1536.  
 of D-gluconic acid in, enzymic - spectroph., 978.  
 of inorg. constituents in, polarogr., review, 367.

- Foods**, determination—*continued*  
 of lysine in, column chrom. - polarogr., 1535.  
 of pesticides in, by A.O.A.C. method, collaborative studies of, 1555.  
 of preservatives in, review, 382.  
 of propionic acid in, by GLC, 2185.  
 of pyridoxine in, paper chrom., 2009.  
 of Sr in, ion-exchange chrom. - flame photom., 2166.  
 of Sn in, colorim., dry ashing of samples for, 2706.  
 iodim., 368.  
 of trace metals in, polarogr., review, 1990.  
 identn. of emulsifiers in, by paper- and thin-layer chrom., 3251.  
 of vanilla flavour compounds in, by TLC, 953.  
 sepn. of riboflavine and quinoline yellow from, paper chrom., identn. by u.v. and fluorescence spectra, 1550.  
 smoked, detmn. of benzo[a]pyrene in, 2175.
- Forensic analysis.** (See also *Toxicological analysis.*)  
 application of radioactivation analysis in, 281.
- Formaldehyde**, analysis of soln. of, by GLC, supports for, 723.  
 detmn., in urban atmospheres, spectroph., 2752.  
 use of Schiff reagent prepared with  $\text{Na}_2\text{HgSO}_4\text{Cl}_2$  in, 1925.
- Formamide, dimethyl-**, detmn. of dimethylamine in, spectroph., 732.
- Formazan**, deriv. of, use of, as reagents, 1101.
- Formic acid**, B.S.I. specification for, 2518.  
 detection, ultra-micro, 1927.  
 identn., in foods, by TLC, 1552.  
 sepn. from acetic acid, paper chrom., 227.
- , oxydi-**, diethyl ester, detmn. of diethyl carbonate in, i.r. spectroph., 2520.
- Forocidine**, detmn., in chicken tissues, column - thin-layer chrom. - microbiol., 2607.
- Fraction collection**, controlled-temp. bath for, 425.
- Frail.** [See *Imidazole*, 1-(2-hydroxyethyl)-2-methyl-5-nitro-.]
- Frangula bark**, detmn. of anthraquinone deriv. in, spectroph., 2686.
- Freeze-drying**, apparatus for, 2234.
- Fructose**, sepn. from glucose and sucrose, in fruit pulps, by TLC, 3246.
- Fruit essences**, grape, detmn. of volatile components of, gas chrom. - mass spectrom., 950.
- Fruit juice**, detmn. of flavonoids in, paper chrom., 951.  
 of methanol in, colorim., 952.
- lemon**, analysis, study of effect of preservatives in, 2178.
- orange**, detmn. of limonin in, spectroph., 2728.  
 of sorbic acid in, spectroph., 384.  
 identn. of soya-bean extract in, 1095C.
- Fruits**, detmn. of s-butylamine in, by GLC, 2191.  
 of captafol and captan in, by solvent extraction - GLC, 959.  
 of catechin and epicatechin in, paper chrom. - densitom., 2179.  
 of dinobuton in, column chrom. - spectroph., 3250.  
 of sorbitol in, thin-layer chrom. - colorim., 377.  
 identn. of pesticides in, column - thin-layer chrom., 1556.  
 screening test for carbaryl in, 958.
- Fucose**, detection, 1921.
- Fuel gas**, analysis, amendment to B.S.I. methods for, 3097.  
 detmn. of S in, B.S.I. lamp method for, 2553.  
 oxidation products of, GLC of, 2548.
- Fuel oil**, detmn. of Si in, by neutron activation, 760.  
 of Na in, atomic-absorption spectroph., 1363.
- Fulvic acids**, detmn., by gel filtration - spectroph., 2738.
- Fumaric acid**, detmn., in presence of acrylamide, polarogr., 2574.  
 sepn. from maleic acid, ion-exchange chrom., 1331.
- Fungicides**, detmn. of phenylmercury acetate in, volum., 407.
- 2-Furaldehyde**, detmn., by oxidation with Br, 3087.  
 in aq. soln., turbidim., 253.  
 in bagasse distillates, volum., 2172.  
 in mixtures with furfuryl alcohol, spectroph., 3088.  
 in org. hydrolysates, by GLC, 1377.
- Furan, tetrahydro-**, use of, as medium in detmn. of acidity, 1093.
- Furazolidone**, detmn., in urine, spectroph., 2606.
- Furfuryl alcohol**, detmn., by oxidation with Br, 3087.  
 in mixtures with 2-furaldehyde, spectroph., 3088.
- Furnaces**, electrical resistance, measurement of performance of, B.S.I. methods for, 1614.

## G

- Galactose**, detmn., spectroph., 301.
- Galacturonic acid**, detection, 1921.  
 detmn., enzymic - spectroph., 1429.
- Gallamine**, detection, in biol. tissues, by ion exchange - spectroph., as reineckate, 809.
- Gallic acid**, dodecyl ester, detmn., semi-quant., ring colorim., 955.
- Gallium**, complex with 2-salicylideneaminophenol, study of, 75.  
 complexes with oxalic and malonic acids, study of, by thermometric titration, 556.  
 detmn., by solvent extraction - fluorim., 2916.  
 fluorim., 74.  
 in minerals, ores or rocks, fluorim., 2917.  
 in semiconductors, oscillogr., 2387.  
 of Se, S and Te in, pulse polarogr., 2330.  
 photom., 2915.  
 spectroph., 1166, 1167, 2386.
- Gallium reagents for**, 4-(5-chloro-2-hydroxyphenyl-azo)resorcinol, 2916.  
 Chrome Azurol S, 1167.  
 8-hydroxyquinoline, 2917.  
 lumogallion, 74.  
 2-[3-(1-methyl-2-piperidyl)-2-pyridylazo]-1-naphthol, 2915.  
 Solochrome cyanine, R, 1166.  
 sulphonazo, 2386.
- Gallium arsenide**, analysis, mass spectrom., 1671.  
 detmn. of Te in, polarogr., 630.
- Gallium phosphide**, detmn. of Se, S and Te in, pulse polarogr., 2330.
- Gamma benzene hexachloride.** (See *Cyclohexane, hexachloro-*)
- Gamma radiation**, measurement of photoelectric emission excited by, sensitivity of, 2813.
- Gangliosides**, sepn., in brain tissue, by solvent extraction and TLC, 2626.
- Garnets**, Al - Y, detmn. of Al and Y in, complexom., 597.
- Gases.** (See also *Fuel gas; Natural gas; Town gas.*)  
 analysis, industrial, bibliography of, 1111.  
 in streams from biol. processing plants, chrom., automated, 3285.  
 i.r. apparatus for, B.S.I. specification for, 2825.  
 of binary mixtures of Ar,  $\text{CO}_2$ , He, N or O, spectrog., 2335.  
 of mixtures of, by GLC, 554, 2337.



**Gases**—*continued*

- atlas of analyses of, by GLC, 14.  
 combustible, detmn., apparatus for, 3290P.  
 detection, apparatus for, 1026P.  
 detmn., in metals, spectrogr., by isotopic equilibration, 2329.  
 of hydrocarbons in, by GLC, 15.  
 of volatile material in, at p.p.10<sup>6</sup> level, by GLC, 3C.  
 of vol. of containers for, 2239.  
 of H<sub>2</sub>O in, 1764.  
 coulom., automated, 1295.  
 flow-meter for, 3287.  
 identn., by use of McLeod gauge, 2772.  
 of contaminants in, micro-wave spectrom., 2242.  
 measurement of, automatic Topler pump for, 1618.  
 permanent, detection, by GLC, 553.  
 petroleum refinery-, analysis, by GLC, 1356.  
 radioactive, device for transfer and dilution of, 1703.  
 sampling of, in large-diameter conduits, apparatus for, 1615P.  
 sepn., by GLC, method for, 3303P.  
**Gelatin**, detmn. of S<sub>2</sub>O<sub>3</sub><sup>2-</sup> in, colorim., 277.  
 polarogr., 1398.  
**Gentamycin**, sepn. of constituents of, by ion-exchange - TLC, 923.  
**Gentisic acid, 3,6-dichloro-**, detmn., in plant tissue, by TLC - GLC, 818.  
**Geranium oil**, analysis, by GLC, 1956.  
 of impurities in, mass spectrom., 2943.  
**Germane**, detmn., in mixtures with SiH<sub>4</sub>, PH<sub>3</sub>, AsH<sub>3</sub>, H<sub>2</sub>S and H, gas chrom., 613.  
**Germanium**, detmn., amperom., 1821.  
 atomic-absorption spectroph., 1753.  
 complexom., indicator for, 2951.  
 in concentrates, photom., 2412.  
 in org. compounds, X-ray spectrogr., 205.  
 in soln. containing H<sub>2</sub>O<sub>2</sub> and HF, photom., 91, 1195.  
 of As in, spectrogr., 2953.  
 of impurities in, 2413.  
 by neutron activation, 2331.  
 of Se in, spectroph., 615.  
 spectroph., 614, 2952.  
**Germanium, reagents for**, bromopyrogallol red, 2952.  
 dihydroxycoumarone, 614.  
 phenylfluorone, 91.  
 2',3',4'-trihydroxychalcone, 1821.  
**Germanium(IV) chloride**, detmn. of impurities in, by kinetic method, 2415.  
**Germanium(IV) oxide**, detmn. of Si in, spectrogr., 2954.  
**Glass**, detmn. of alkali yielded by, comparison of pharmacopoeial methods for, 3190.  
 of B and Si in, photom., 193.  
 of Fe<sup>II</sup> and Fe<sup>III</sup> in, volum., 1293.  
 of Pb in, atomic-absorption spectrogr., 2491.  
 of ref. ind. of fragments of, 1891.  
**Globulin, gamma-**, detmn., in blood serum, column chrom. - spectroph., 2085.  
 macro-, sepn., in blood serum, paper chrom. or paper electroph., 886.  
**D-Gluconic acid**, detmn., in foods, enzymic - spectroph., 978.  
**Glucose**, <sup>14</sup>C-labelled, sepn. from <sup>14</sup>C-labelled lactate, ion-exchange chrom. - radiom., 2613.  
 detmn., enzymic - polarogr., 2614.  
 in blood, by Dextrostix test, limitations of, 1427.  
 in blood plasma, enzymic, 'test pack' reagents for, 2028.

**Glucose**, determination—*continued*

- in body fluids, spectroph., 821.  
 in urine, enzymic - fluorim., 2027.  
 spectroph., 301.  
 sepn. from fructose and sucrose, in fruit pulps, by TLC, 3246.  
 trimethylsilyl deriv. of, detmn., by GLC, 720.  
**Glucosides**, thio-, of rapeseed, analysis, enzymic - gas chrom., 398.  
**Glucuronides**, sepn., in urine, by GLC, 822.  
**Glutamic acid, N-formimidoyl-**, detmn., in urine, enzymic, preservation of tetrahydrofolic acid - enzyme system for, 2647.  
**Glutaraldehydic acid**, detmn. of isomers of, 3067.  
**Glutaric acid, 2-oxo-**, detmn., in fermentation broth, enzymic - spectroph., 830.  
**Glutathione**, detmn., enzymic - spectroph., 1458.  
 identn., spectroph., based on rate of reaction with formaldehyde, 3173.  
 reduced, detmn., in presence of ascorbic acid, potentiom., 3171.  
**Glutethimide**, identn., in urine, by TLC, 1416.  
**Glycerides**, detmn., in mixtures with fatty acids, by GLC, silylation agent for, 2629.  
 di-, digalactosyl-, detmn., in plants, in presence of sulpholipids, column - thin-layer chrom. - spectroph., 2046.  
 sulphoquinovosyl-, detmn., in plants, in presence of galactolipids, column - thin-layer chrom. - spectroph., 2046.  
 epoxy-, detection, in lipids, by TLC, spray reagent for, 3145.  
 tri-, analysis, in milk fat, by GLC, 2622.  
 C<sub>6</sub> to C<sub>60</sub>, analysis, in human milk fat, by GLC, 2621.  
 detection of rearrangement reactions of, by TLC, 1573.  
 detmn., in blood plasma, 2623.  
 in blood serum, fluorim., semi-automated, 2624.  
 GLC of, 1572.  
 sepn., in blood plasma, column - thin-layer chrom., 2045.  
**Glycerol**, detmn., constant-current potentiom., 713.  
 in blood plasma, source of error in, 2040.  
 in cosmetics, by GLC, 1375.  
 in lipids and phospholipids, by GLC as the triacetate, 2041.  
 in presence of 1,2-O-isopropylideneglycerol volum., 2203.  
**Glycerol trinitrate**. (For the explosive see *Nitroglycerin*.)  
 detmn., in air, by GLC, 411.  
 identn., in pharm. prep., by TLC, 1534.  
 —, **1,2-O-isopropylidene-**, detmn., in presence of glycerol, volum., 2203.  
**Glycerophosphonolipids**, identn., in presence of phospholipid analogues, by paper chromatography of their saponification products, 1440.  
**Glycine**, detmn., in drug mixtures, volum., 2144.  
 —, **2-phenyl-**, (±)-, resolution of, on optically active high polymers, 1940.  
**Glycols**, detmn., in biol. materials, spectroph., 2039 volum., 1318.  
 trimethylsilyl ethers of, sepn., by TLC or GLC, 3144.  
**Glycopeptides**, detmn. of neutral sugars and hexosamines in, thin-layer chrom. - densitom., 1459.  
**Glycoproteins**. (See under *Proteins*.)  
**Glycopyranosides**, sepn., ion-exchange chrom., 3064.  
**Glycosides**, cardiac, sepn., paper chrom., and elucidation of structure by, 2136.  
 D-, sepn. of α- and β-, by TLC, 1923.

**Lycosides**—*continued*

- polyphenolic, sepn., gel chrom., 1430.  
 sepn. of methylated methyl glucosides, arabinosides and rhamnosides, by TLC, 220.  
**lold**, analysis, radio-isotope X-ray fluorim., 573.  
 detmn., by solvent extraction - photom., 2362.  
 in blood, by neutron activation, 3125.  
 in minerals, ores or rocks, by neutron activation, 2363, 2889.  
 comparison of methods for, 1782.  
 spectrogr., 3041.  
 in pharm. prep., spectroph., 3240.  
 in skin, by neutron activation, 282.  
 of Se and Te in, polarogr., 2364.  
 spectrogr., 1783.  
 spectroph., 52.  
 sepn. from other metals, on  $\text{Sn}^{\text{IV}}$  phosphate and tungstate papers, 1112.  
**lold**, reagents for, methyl green, 2362.  
 tris-1,10-phenanthroline -  $\text{Fe}^{\text{II}}$ , 52.  
**lold alloys**, detmn. of Au in, spectroph., 1150.  
**lonadotrophin**, detmn., in urine, pptg. agents for, 2652P.  
**loose fat**, detmn., in mixtures with lard, by GLC as methyl esters of fatty acids, 3244.  
**trape must**, detmn. of citric acid in, colorim., 1567.  
**trapnite**, detmn. of impurities in, by neutron activation, 129.  
**trass**, detmn. of non-structural carbohydrates in, comparison of hydrolysis procedures for, 988.  
**travimetric analysis**, pptn. from homogeneous soln. in, 541.  
**roundnuts**, detection of adulteration of ground almonds by, 1547.  
 of aflatoxins B and G in, by TLC, 2182.  
 detmn. of aflatoxin B<sub>1</sub> in, by TLC, 2180.  
**uaiaacolsulphonic acid**, K salt, detmn., in pharm. prep., colorim., 1529.  
**uaiphenesin**, detmn., in pharm. prep., in presence of acetylsalicylic acid, caffeine and chlorpheniramine, paper chrom., 2703.  
**uanidine**, deriv. of, detection and chromatography of, review, 854.  
 detmn., by TLC, 2066.  
 detmn., in presence of related compounds or  $\text{NH}_4^+$ , gravim., 3266.  
 phosphoryl deriv. of. (See *Phosphagens*.)  
 -, **nitro**-, detmn., amperom., 736.  
 -, **pentafuoro**-, sepn., column chrom., 1333.  
**uanine**, **8-aza**-, detmn., in tissue homogenates colorim., 337.  
**typsium**, detmn. of trace elements in, spectrogr., 2209.

**H**

- IMX**. (See 1,3,5,7-Tetrazocine, octahydro-1,3,5,7-tetranitro-.)  
**laemin**,  $^{14}\text{C}$ -labelled, detmn., radiom., methods of counting in, 1468.  
 detmn. of Co in, by neutron activation, 885.  
**laemoglobin**, A and S, detmn., starch-gel electroph. - spectroph., 2095.  
 $^{14}\text{C}$ -labelled, detmn., radiom., methods of counting in, 1468.  
 concn. of soln. of, dialysing apparatus for, 2086.  
 detection of -SH groups in, electroph. - autoradiogr., 2096.  
 detmn., in blood, spectroph., 331.  
 in blood plasma, spectroph., 2094.  
 in erythrocyte haemolysates, ion-exchange chrom. - spectroph., 3180.  
 of total body, by monitoring alveolar CO and O in closed-breathing system, 332.

- Hafnium**, detmn., by neutron activation, in presence of Zr and Fe, 2419.  
 in presence of Mo, photom., 1828.  
 photom., 2962.  
 solvent extraction of, as thiocyanate, with acetophenone, 2420.  
**Hafnium**, reagents for, arsenazo III, 1828.  
 catechol violet, 2962.  
**Hair**, detmn. of As in, by neutron activation and beta-counting, 291.  
 of cystine in, volum., 3172.  
 phospholipids of, analysis, by TLC and GLC, 837.  
**Halides**, detmn., in chrom. effluents, polarogr., 1242.  
 sepn., column chrom., 1245.  
 of  $\text{Br}^-$ ,  $\text{Cl}^-$  and  $\text{I}^-$  on  $\text{Al}_2\text{O}_3$ , 1244.  
 on hydrated  $\text{ZrO}$ , 1243.  
**Hallucinogenic drugs**. (See *Psychotomimetic drugs*.)  
**Halogens**, detmn., in org. compounds, potentiom., 1302.  
 simult. with C and S, by GLC, 1298.  
 in S-containing materials, by O-flask method, 1864.  
**Haptoglobin**, detmn., in blood serum, agar-gel electroph., 881.  
**Harman**, detmn., in plants, simult. with harmine, thin-layer chrom. - spectroph., 3206.  
**Helium**, detection, in air, by thermal conductivity, 424.  
 detmn., in mixtures with Ar, by GLC, without carrier gas, 2344.  
 in presence of H, N and methane, gas chrom., 546.  
 of CO, H and N in, mass spectrom., 38.  
 of H in, by GLC, 2347.  
**Hemicellulose**, detmn., ion-exchange chrom., 265.  
**Heparin**, detmn., in pharm. prep., by measuring blood-clotting time, 920.  
**Heptachlor**, detmn., in fats and fatty oils, by GLC, after clean-up on alumina column, 2196.  
 sepn. from BHC, the cyclodienes and DDT analogues, by GLC, 2217.  
**Heptachlor epoxide**, detmn., in fats and fatty oils, by GLC, 2196.  
 sepn. from BHC, cyclodienes and DDT analogues, by GLC, 2217.  
**Heptane**, analysis of mixtures with di-isopropylbenzenes and 1-methylnaphthalene, by GLC, 3057.  
**Herbicides**, detection, on TLC plates, comparison of methods for, 994.  
 urea deriv., detmn., in soil and crops, by steam distillation and GLC as iodinated deriv., 2743.  
**Herring oil**, detmn. of autoxidation in, by GLC, 1574.  
**Heterocyclic compounds**. (See under *Organic compounds*.)  
**Hexacyanoferrate**. (See *Ferrocyanide*.)  
**Hexadecane**, analysis of mixtures with di-isopropylbenzenes and 1-methylnaphthalene, by GLC, 3057.  
 solid - liquid phase diagram for mixtures with tetradecane, 1031.  
**Hexadecanol**,  $\text{H}_2\text{O}$ -solubility of, 218.  
**Hexamine**, detmn., in pharm. prep., complexom., 3228.  
 identn., by reaction with  $\text{HgCl}_2$ , 734.  
**Hexane**, detmn. of aromatic polycyclic hydrocarbons in, column - thin-layer chrom. - spectroph., 2734.  
**Hexene**, identn., photochem., oxidation products of, by GLC, 2507.  
**Hexosamines**, detmn. of protein-bound, in blood serum, spectroph., 2029.

- Hexoses**, detmn., u.v. spectroph., after reaction with  $\text{H}_2\text{SO}_4$ , 302.
- Hexuronic acids**, detmn., spectroph., modifications of carbazole reaction for, 303.
- Hippuran**. (See *Hippuric acid*, 2-iodo-, Na salt.)
- Hippuric acid**, detmn., in urine, simult. with benzoic acid, ion-exchange chrom. - spectroph., 2616.
- , 2-iodo-, Na salt,  $^{131}\text{I}$ -labelled, identn. of impurities in, paper chrom., 2159.
- Histidine**, detmn. of histamine in, in pharm. prep., fluorim., 2135.
- Histones**, hydrolysates of, presence of O-sulphates in, as cause of error in amino-acid analysis of proteins, 1456.
- Holmium**, detmn., in presence of other elements, photom., 599.
- Homocysteine**, identn., spectroph., based on rate of reaction with formaldehyde, 3173.
- Homopantothenic acid**, detmn., in soln., spectroph., 2103.
- Homosulphamine**. (See *Maphenide*.)
- Homovanillic acid**. (See *Acetic acid*, 4-hydroxy-3-methoxyphenyl-.)
- Hop oil**, investigation of, in wort, by GLC, 966.
- Hops**, detmn. of alpha-acids of, conductim., use of pyridine in, 965.
- extract of, detmn. of alpha- and beta-acids in, comparison of methods for, 967.
- and residual solvents in, review, 968.
- Hormones, steroidal**. (See under *Steroids*.)
- Humidity**, control of, apparatus for, 2235.
- Hydrastinine**, detmn., thin-layer chrom. - spectroph., 2684.
- Hydrazides**, acyl, detection, on paper chromatograms, 3072.
- Hydrazine**, detection, spot test for, 627.
- methyl deriv. of, GLC of, 1336.
- Hydrocarbon oils**. (See *Fuel oil*.)
- Hydrocarbons**. (See also *Sesquiterpenes*; *Terpenes*.)
- aliphatic,  $\text{C}_1$  to  $\text{C}_6$ , sepn., from air, column chrom., automated, use of dual columns in, 2222.
- $\text{C}_6$  to  $\text{C}_9$ , effect of temp. in GLC of, 709.
- $\text{C}_6$  to  $\text{C}_{12}$ , GLC of, specific retention vol. for, 710.
- $\text{C}_{12}$  to  $\text{C}_{15}$ , identn., in tobacco, by GLC, 824.
- detmn. of aromatic compounds in, column chrom., 255, 2530.
- nitro-, GLC of, 1332.
- oxidised, analysis, 1358.
- sepn. from olefins, column chrom., 2558.
- analysis, by GLC, hydrogenation and dehydrogenation of fractions in, 1310.
- aromatic, detmn., in air, by GLC, 412, 2753.
- in foods, column - thin-layer chrom. - u.v. spectroph., 2170.
- polycyclic, detmn., in air, foods and water, review of methods for, 2754.
- sepn., by TLC, 2C, 1351.
- paper chrom., 751.
- continuous measurements of fluorescence and absorption in, 752.
- $\text{C}_1$  to  $\text{C}_{10}$ , analysis, by GLC, 213.
- $\text{C}_6$  to  $\text{C}_9$ , detmn. of unlabelled and  $^3\text{H}$ -labelled, by GLC and mass spectrom., 2505.
- chloro-, detmn., in industrial wastes, by TLC - GLC, 2233.
- detmn., in gases, by GLC, 15.
- in methanol soln., flame spectroph., 1311.
- of aromatic compounds in, by TLC, fluorescent indicators for, 2550.
- of elements in, by neutron activation, 758.
- Hydrocarbons**, determination—continued
- of impurities reacting with organoaluminium compounds, by continuous-flow thermometry, 2508.
- of  $\text{H}_2\text{O}$  in, by GLC, 712, 1918.
- GLC of, 3C.
- carrier-gas effects in, 439.
- on alumina columns, specific interactions affecting, 1917.
- identn., by GLC, 212.
- olefins, detmn., in atmospheric dust, spectroph. after oxidative treatment, 1596.
- sepn. from aromatic hydrocarbons, by GLC, 1916.
- pyrolysis - GLC of, 1913.
- sepn., by GLC, at  $200^\circ$  below their b.pt. with  $\text{H}_2\text{O}$  as stationary phase, 1914.
- on mol. sieves, 3091P.
- of  $\text{C}_{11}$  to  $\text{C}_{18}$  n-paraffins by GLC with liquid films on salts, 214.
- of long-chain mono- and di-olefins, by GLC, 1313.
- of n-octenes, n-hexynes and hexadienes, by GLC, 1312.
- Hydrochloric acid**, detmn., in soln. of cations, by ion exchange - spectroph., automated, 2457.
- of chloromethanes in, by GLC, 2458.
- of org. Cl in, 1255.
- Hydrochlorothiazide**, detection, in presence of 4-amino-6-chlorobenzene-m-disulphonamide, by TLC, 3233.
- Hydrocortisone**, acetate, detmn., in injections, by X-ray diffraction, 940.
- detmn., by temp.-programmed GLC, prepn. of thermostable deriv. for, 2637.
- in blood plasma, fluorim., 3152.
- sepn. from its smetabolites in urine, by TLC, 2059.
- , 6 $\beta$ -hydroxy-. (See *Pregn-4-ene-3,20-dione* 6 $\beta$ ,11 $\beta$ ,17 $\alpha$ ,21-tetrahydroxy-.)
- Hydrofluoric acid**, detmn. of impurities in, anodic stripping voltamm., 2455.
- rotational spectrum of, 1246.
- Hydrogen**, detmn., in gas mixtures, amperom. with solid-electrolyte indicator cell, 1762.
- in org. compounds, coulom., automated, 1295.
- gravim., automated, 197.
- in org. solvents, by neutron scattering, 198.
- of isomers of, by GLC, 2349.
- of N and O in, mass spectrom., 1763.
- gas-diffusion assembly for, 3289P.
- isotopes of, sepn., column chrom., 2874P.
- sepn. from He, by adsorption on charcoal at  $-196^\circ$ , 2873.
- Hydrogen peroxide**, analysis of soln. of, by pyrolysis - GLC, 1131.
- detmn., in blood serum, spectroph., automated use of a xylenol - Ti system for, 2588.
- in presence of org. peroxides, 2509.
- photom., 39.
- spectroph., 1767.
- Hydrogen sulphide**, detmn., spectroph., 119.
- Hydroperoxides**, detmn., in milk, polymers or cosmetics, diagnostic agents for, 2587P.
- Hydroxamic acids**, detection, paper chrom., 2523.
- of  $\text{C}_2$  to  $\text{C}_4$  carboxylic acids, TLC of, 725.
- Hydroxides**, electrochemical reduction of, 1843.
- Hydroxy-acids**. (See under *Carboxylic acids*.)
- Hydroxyl-groups**, detmn., in phenolic compounds i.r. spectroph., as 2,4-dinitrophenyl ethers, 704.
- tertiary, detmn., spectroph., 705.
- Hyoscine**, detmn., thin-layer chrom. - spectroph., 1498.
- hydrobromide, detmn., in pharm. tablets, in presence of phenobarbitone, column chrom., 1493.



**Hyoscyamine**, detmn., thin-layer chrom. - spectroph., 1498.  
 hydrobromide, detmn., in pharm. tablets, in presence of phenobarbitone, column chrom., 1493.  
**Hyoscyamus alkaloids**, detmn., thin-layer chrom. - spectroph., 1498.  
**Hypnotics**, identn., in urine, by TLC, 1416.  
**Hypochlorite**, detmn., potentiom., 1253, 1254.  
**Hyponitrite**, detmn., spectroph., 1832.  
**Hypophosphite**, detmn., in presence of  $H_3PO_3$ , potentiom., 101.  
**Hypoxanthine**, detmn., in urine, simult. with xanthine, enzymic - spectroph., 336.

## I

**Ilipie oil**, analysis of fatty acids of, by urea fractionation and GLC of methyl esters, 1571.  
**Imenite**, detmn. of Cr in, spectroph., 650.  
**Imidazole**, 1-(2-hydroxyethyl)-2-methyl-5-nitro-, detmn., in pharm. tablets, X-ray diffractom., 940.  
 —, nitro-, deriv. of, identn. on chromatograms, 754.  
**imidodisulphamide**, sepn. from sulphamide and trisulphimide, ion-exchange chrom., 1230.  
**mipramine**, and metabolites of, detmn., in biol. materials, by GLC, 1096C.  
 detection, on thin-layer chromatograms, apparatus for, 1518.  
**imperatorin**, paper chromatography of, effect of paper impregnation with dimethylformamide, 2128.  
**indane-2,3-dione**, dichloro- deriv., applications of, as reagents, 534.  
**indanol**, TLC of, 2C.  
**indan-1-one, methyl-**, and hydroxy-deriv. of, NMR of, 486.  
**indicators**, acid - base, compounds for turbidity indication, 2852.  
 NN'-ditriazinyl deriv. of 4,4'-diaminostilbene-2,2'-disulphonic acid as, 12.  
 2-furaldehyde 4-nitrophenylhydrazone as, 537.  
 Meldola blue and muscarin as, 1105.  
 adsorption, amphoteric, 2854.  
 for oxalate, bromocresol green, 3069.  
 bromopyrogallol red, 3069.  
 p-nitro- $\alpha$ -naphthyl red, 1106.  
 fluorescent, for Al, 71.  
 for F<sup>-</sup>, arsenazo I, 700.  
 Chrome Azurol S, 2453.  
 Na purpurin-3-sulphonate, 133.  
 for  $SO_4^{2-}$ , dimethylsulphonazo [3,6-bis(4-methyl-2-sulphophenylazo)chromotropic acid], 637.  
 nitchromazo [3,6-bis(4-nitro-2-sulphophenylazo)chromotropic acid], 739, 1778.  
 thoron I, 637.  
**metallochromic**, 3',3''-bis(3-carboxy-2-hydroxy-1-naphthylazo)phenolphthalein, 1006.  
 2-(5-bromo-2-pyridylazo)-5-ethylamino-p-cresol, 2416.  
 calcein, 802.  
 Calcon, 2893.  
 with murexide, 57.  
 3-cyano-1,5-bis(2-hydroxy-5-sulphophenyl)-formazan, 2951.  
 2-(3,5-dibromo-2-pyridylazo)-5-ethylamino-p-cresol, 2416.  
 5-ethylamino-2-(2-pyridylazo)-p-cresol, 593, 2416.  
 gallein, 1774.  
 hydroxy naphthol blue, 801.  
 2-(2-pyridylazo)-p-cresol, 2416.  
 radioactive kryptonates, 2328.

**Indicators**, metallochromic—*continued*  
 zincon and its Hg and Zn complexes, 538.  
 redox, promethazine hydrochloride for vanadimetry, 2853.  
**Indium**, detmn., gravim. or volum., 1168.  
 in iron and steel, polarogr., 1270.  
 in minerals, ores or rocks, by neutron activation, 1170.  
 of Se, S and Te in, pulse polarogr., 2330.  
 of Sn in, by solvent extraction - photom., 2388.  
 photom., 1169.  
 spectroph., 78, 1166, 1167, 1797.  
 distribution between HCl and binary solvent mixtures containing isobutyl methyl ketone, 2918.  
 polarogr. behaviour of, in nitrilotriacetic acid media, 592.  
 sepn. from Al and Cd, by ion exchange, 2919.  
 of  $^{114m}In$  from irradiated Cd, by solvent extraction, 1798.  
**Indium**, reagents for, Chrome Azurol S, 78, 1167.  
 lumogallion, 1797.  
 2-[3-(1-methyl-2-piperidyl)-2-pyridylazo]-1-naphthol, 1169.  
 Solochrome cyanine R, 1166.  
**Indium antimonide**, detmn. of Se, S and Te in, pulse polarogr., 2330.  
**Indium arsenide**, detmn. of Te in, polarogr., 630.  
**Indium phosphide**, detmn. of impurities in, spectrogr., 2389.  
**Indole**, deriv. of, fluorescence behaviour of, 860.  
 sepn., by TLC, 3161.  
 —, 5-methoxy-, detection, fluorim., 860.  
**Indolizine**, deriv. of, detmn., spectroph., 2547.  
**Industrial wastes**, analysis, automated, dual-column chromatograph for, 3285.  
 detmn. of acetophenone in, u.v. spectroph., 1611.  
 of Cd and Pb in electroplating effluents, volum., 3284.  
 of  $^{137}Cs$  in, by isotope dilution and gamma-counting, 2232.  
 of C.O.D. of, volum., 1610.  
 of chlorinated hydrocarbons in, by TLC - GLC, 2233.  
 of Cl in treated waste water, continuous, comparison of methods for, 3283.  
 of Co in, spectroph., 1014.  
 of CN<sup>-</sup> in, free and total, review, 419.  
 of  $^{131}I$  in, by liquid scintillation counting, 1608.  
 of oil in petroleum wastes, i.r. spectroph., 1948.  
 of phenols in, by GLC, 2767.  
 spectroph., suppression of interference by  $S^{2-}$ , 421.  
 of P in, photom. or wet-combustion methods for, 1607.  
 of surfactants, non-ionic, in, photom., comparison of methods for, 1020.  
 of triethyl-lead in, volum., 1609.  
 of U in, polarogr., remotely operated, 1606.  
 radioactive, detmn. of metallic isotopes in, ion-exchange chrom. - scintillation counting, 2768.  
**Injections, parenteral**, detmn. of K in, potentiom., 363.  
**Inks**, identn., paper electroph., 275.  
**Inositol**, detmn., by TLC, 2C.  
 in feeding-stuffs, microbiol., 1581.  
 epi-, phosphate, detection, paper chrom., 1408.  
**Invert sugar**, detmn., in presence of excess of sucrose, spectroph., 1537.  
**Iodate**, detmn., in swimming-pool water, in presence of Cl, spectroph., 1007.  
**Iodide**, detmn., by isotopic exchange, 3011.  
 by rate of reaction with  $Ce^{4+}$  -  $AsO_3^{3-}$ , 135.  
 in natural water, absorption, 1602.

**Iodide, determination—continued**

in swimming-pool water, in presence of Cl, spectroph., 1007.

**Iodine, detection, in org. compounds, spot test for, 200.**

detmn., in org. compounds, by O-flask combustion - spectroph., 201.

simult. with C, volum., 1902.

in swimming-pool water, in presence of Cl, spectroph., 1007.

kinetic method for, 136.

org., detmn., in blood serum, automated, 293.

**Iodonium ions, diphenyl-, detection, in presence of  $\text{Ti}^+$ , tetraphenylarsonium and tetraphenylphosphonium ions, electroph., 3079.****Iodophthalein, detection, on paper- or thin-layer chromatograms, spray reagent for, 2158.****Ion exchange, in liquid  $\text{NH}_3$  at  $-74^\circ$ , 1647.**

materials for, comparison of liquid and solid, used as ion-specific electrodes, 2840.

inorg. synthetic, salts of polybasic acids as, 3316.

review, 3314.

selective resin for alkali metals, 2877.

Zr arsenate as, 27.

Zr phosphate as, 2805.

removal of liquid in, centrifugal device for, 456.

sepn. of metals by, before spectrography, 2867.

synthetic membranes for, review, 1075.

**Ion micro-probe mass analysis, apparatus for, 2290.****Iopanoic acid, detection, on paper or thin-layer chromatograms, spray reagent for, 2158.****Ioxynil, detmn., in mixtures of phenolic pesticides, enzymic, 2220.****Iridium, detmn., by solvent extraction - spectroph., 174.****Iridium, reagent for, 2-thenoyltrifluoroacetone, 174.****Iridium compounds, radioactive, sepn., chrom. and electroph., 3C.****Iron, adsorption of  $\text{Fe}^{\text{III}}$  from isobutyl methyl ketone medium by silica gel, 146.**

analysis, X-ray spectrogr., prepn. of samples for, 1265.

cast, detmn. of Ce in, photom., 2470.

spectroph., 667.

complexes with oxalic and malonic acids, study of, by thermometric titration, 556.

with tributylamine - citrate, solvent extraction of, 3017.

detection of  $\text{Fe}^{\text{II}}$ , 138.

detmn., by reduction with Ni boride, 1261.

by solvent extraction - spectroph., 144.

in biol. materials, spectroph., 808.

in blood plasma, atomic-absorption spectroph., 2007.

in blood serum, spectroph., 808.

in ceramics, simult. with Ti, polarogr., 3045.

in minerals, ores or rocks, complexom., 589.

in phosphor materials, by ion exchange - photom., 2463.

in plants, X-ray spectrogr., volume-reduction technique for, 2599.

in presence of V, atomic-absorption spectroph., 3019.

in quartz, simult. with Ti, polarogr., 3045.

in salts, photom., 3016.

in soil, potentiom., 3263.

in urine, colorim., after chelation with acids, 2600.

of H in, storage of samples for 1871.

of impurities in, by neutron activation, 1268.

of In in, polarogr., 1270.

of  $\text{Fe}^{\text{II}}$ , anodic-stripping voltamm., 1868.

in natural water, photom., 2762, 2763.

spectroph., 142.

**Iron, determination—continued**

of  $\text{Fe}^{\text{III}}$ , gravim., for beta- or gamma-counting, 1264.

in presence of  $\text{Cr}^{\text{III}}$ , complexom., 2338.

of V, volum., 3018.

ring-colorim. - complexom., 661.

spectroph., 140, 141, 143.

volum., 36, 1262.

of  $^{59}\text{Fe}$  and stable Fe, by scintillation counting, 1869.

of Si in, by GLC of chlorides, 1873.

photom., with Na sulphosalicylate, effect of temp. on, 2462.

simult. with Ti, in quartz, a.c. polarogr., 3045.

spectroph., interferences in, 2461.

reduced powder, detmn. of metallic Fe in, by X-ray diffraction, 139.

sepn. of  $\text{Fe}^{\text{III}}$  from other metals, paper chromat., 141.

of other elements from, by ion exchange, 147.

148.

by solvent extraction from HCl soln., 149.

solvent extraction of fluoride complexes of, with amines, 663.

**Iron, reagents for, benzenesulphinic acid, 1264.**

Chrome Azurol S, 140.

cupferron, 1262.

5,7-dibromo-8-hydroxyquinoline, 141.

2',4'-dihydroxypropiophenone oxime, 143.

4,7-diphenyl-1,10-phenanthroline, 144, 160, 2762.

4,7-diphenyl-1,10-phenanthroline disulphonic acid di-Na salt, 649, 808.

ethyl 4,6-dihydroxy-5-nitrosocotinate, 142.

ethylenediaminedi-N'-(*o*-hydroxyphenyl)acetic acid, 2461.

8-mercaptoquinoline, 1162.

1,10-phenanthroline, 144.

2,4,6-tripyridyl-1,3,5-triazine, 144, 2762.

**Iron alloys, analysis, X-ray spectrogr., prepn. of samples for, 1266.**

chromium, detmn. of N and O in, by vacuum fusion, 1277.

detmn. of Al in, by thermoelectric potential, 1872.

of Ce in Fe - Si - Mg, spectroph., 667.

of Fe in, volum., 3015.

of S in, by combustion - volum., 1228.

manganese, detmn. of Co, Cu, Fe, Pb and Zn in, by ion exchange, 1258.

of H in, by vacuum extraction, collaborative study of, 151.

niobium, detmn. of Nb in, volum., 155.

detmn. of Ti in, spectroph., 155.

titanium, detmn. of Ti in, gravim., 1198.

vanadium, detmn. of P in, spectroph., 1274.

**Iron ores, analysis, atomic-absorption spectroph., 2487.**

detmn. of Ca and Mg in, atomic-absorption spectroph., 3021.

of Fe, CaO and  $\text{SiO}_2$  in, X-ray spectrogr., 662.

**Iron(II) oxalate, detmn., volum., 730.**

**Isobutyl methyl ketone, detmn. of  $\alpha$ -unsatd. ketone in, by GLC, 1326.**

**Isoniazid, identn., by TLC, 1522.**

**Isonicotinamide, detection, in isonicotinonitrile, by TLC, 3185.**

**Isonicotinic acid, detection, in isonicotinonitrile, by TLC, 3185.**

**Isonicotinonitrile, detection of isonicotinic acid as its amide in, by TLC, 3185.**

**Isopentane, oxidation products of, analysis of a soln. of, by GLC, 2506.**

**Isopentyloxy-groups, detmn., in synthetic drugs by GLC, 2679.**

**Isoprenaline**, detmn., in pharm. prep, 1C.  
**Isoprene**, analysis of products in synthesis of, by GLC, 3120.  
 detmn. of  $\text{NH}_3$  in, photom., 1394.  
**Isopropyl alcohol**, sepn. from  $\text{H}_2\text{O}$ , by silicone rubber membranes, 1919.  
**Isothiocyanate**, detmn., in rapeseed digests, in presence of oxazolidine-2-thiones, spectroph., 989.  
**Isotopes**, gaseous, sepn., by thermal diffusion, apparatus for, 2250.  
**Isotopic exchange**, simult. with separation by GLC, 451.

## J

**Joints**, between fused silica and metals, method for making, 2770.  
**Juniper oil**, monoterpene hydrocarbons of, GLC of, 1957.

## K

**Kallidin**, sepn. from related kinins, paper electroph. - paper chrom., 3175.  
**Kelthane**, detmn., in vegetable oils, by extractive distillation and GLC, 1561.  
**Kerosene**, detmn. of n-paraffins in, by GLC, 256.  
 by mol. sieve - GLC, 257.  
**Ketones**. (See also *Carbonyl compounds*.)  
 detmn. of binary mixtures of, by differential kinetic method, 3066.  
 spectroph., as dinitrophenylhydrazones, 722.  
**Ketophenylbutazone**, detmn., in presence of its decomposition products, by TLC on fluorescent silica gel, 931.  
**Krypton**, detmn. of  $^{85}\text{Kr}$  in natural water, simult. with  $^3\text{H}$ , by liquid-scintillation counting, 3274.  
 GLC of, on mol. sieves, abnormal behaviour of, 1639.  
**Kynurenine**, sepn. from xanthurenic acid and 3-hydroxykynurenine, by TLC, 871.  
 —, **3-hydroxy-**, sepn. from xanthurenic acid and kynurenine, by TLC, 871.

## L

**LSD**. (See *Lysergide*.)  
**Laboratory apparatus**, burettes, modification of Gorbach membrane micro-, 2240.  
 pipettes, colour coding of, amendment to B.S.I. standard for, 1024.  
 Oswald-Folin, B.S.I. standard for, 1025.  
**Lacquers**, nitrocellulose, analysis of solvent mixtures in, by GLC, 785.  
 wire-, i.r. spectra of, 3114.  
**Lactalbumin**, hydrolysate, detmn. of casein in, microscopic, 2715.  
**Lactate**,  $^{14}\text{C}$ -labelled, sepn. from  $^{14}\text{C}$ -labelled glucose, ion-exchange chrom. - radiom., 2613.  
**Lactic acid**, detmn., in bakery products, comparison of methods for, 2709.  
 in blood, enzymic - fluorim., automated, 2615.  
 in wine, spectroph., correction for aldehyde combined with  $\text{SO}_2$  in sample, 2731.  
 esters of, diastereoisomeric, sepn., ion-exchange chrom., 3071.  
 —, **4-hydroxyphenyl-**, detmn., in urine, in presence of related phenolic acids, colorim., 2620.  
**Lactose**, detmn., by periodate oxidation, 3062.  
 in blood plasma and urine, enzymic - spectroph., 2030.  
 in cheese, column chrom. - spectroph., 2176.

**Laevulic acid**, 5-amino-, detmn. in blood plasma, ion-exchange chrom. - spectroph., 2034.  
**Lanthanides**, complexes with 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid, anion-exchange behaviour of, 2400.  
 with  $\beta$ -diketones, fractional sublimation of, 1803.  
 sepn., by TLC, 2401.  
 with 1,3,4,5-tetrahydroxycyclohexanecarboxylic acid, stability of, 602.  
 detmn., by Pb displacement - polarogr., 79.  
 by rotatory magnetic dispersion, 600.  
 sepn. from actinides, by ion exchange, 3C.  
 solvent extraction of, by naphthenic acids, 2399.  
**Lanthanum**, detmn., in Th dioxide, by neutron activation, 2430.  
 photom., 598.  
**Lanthanum reagents for**, arsenazo III, 598.  
 methylthymol blue, 1164.  
 1,3,4,5-tetrahydroxycyclohexanecarboxylic acid, 602.  
**Lanthionine**, detmn., in wool, by TLC, 3104.  
**Lard**, detmn. in mixtures with goose fat, by GLC as methyl ethers of fatty acids, 3244.  
 of dilauryl 3,3'-thiodipropionate in, temp.-programmed gas chrom. - spectroph., 2189.  
**Lasers**, use of activated U as getter in, 1652.  
**Lauric acid**, pentachlorophenyl ester, detmn., in wood preservative soln., by GLC, 2748.  
**Lead**, complexes with pyridylazo compounds, study of, 2416.  
 detection, in biol. materials, in presence of Tl and As, by TLC, 1405.  
 detmn., amperom., with deriv. of 2,6-dimercaptothiopyran-4-one, 619.  
 by co-crystallisation with NaCl and spectroph., 2957.  
 by co-ordination chain reaction with automated rate measurement, 17, 18.  
 by gel diffusion, 30.  
 by reduction by zinc, retardation of cementation in, 1141.  
 gravim., 2979.  
 in biol. materials, spectrogr., 1577.  
 in cerussite, complexom., 2416.  
 in foods, by isotope dilution - spectroph., 369.  
 in minerals, ores or rocks, by ion exchange, 1289.  
 in petrol, gravim., B.S.I. method for, 2552.  
 in sugar, polarogr., 370.  
 in urine, atomic-absorption spectroph., after extraction with dithizone, 3129.  
 simult. with Cd, polarogr., 2002.  
 and liver, polarogr., after cementation on zinc, 1989.  
 of As in, spectroph., 620.  
 of Cu in, by neutron activation, 1148.  
 oscillopolarogr., 93.  
 polarogr., 2417.  
 sepn. from other cations, in soln. of chlorides or malonates, by ion exchange, 617.  
 of traces of, by redox exchange with Hg, 1095C.  
 —, **tetraethyl-**, detmn., in air, by GLC, 3271.  
 —, **triethyl-**, detmn., in industrial wastes, volum., 1609.  
**Lead reagent for**, nioxime, 2979.  
**Lead nitrate**, detmn., potentiom., 1824.  
**Lead telluride**, detmn. of Bi and Ni in, spectrogr., interference in, by lines due to Mo, 1196.  
**Lecithins**, liver, sepn., by argentation TLC, 2627.  
**Lemon oil**, comparison of Italian and Californian, by GLC, 3249.



**Lemonade**, detmn. of sorbitol in, volum., 3252.

**Leucine, *N*-leucyl-**, sepn. of diastereoisomers of, ion-exchange chrom., 3174.

**Lichens**, sepn. of acids from, by TLC, 828.

**Lignin**, analysis of phenols of, by GLC, 1964.

ethanolysis products of, identn. and detmn., 3103.

sepn., paper chrom., 266.

**Limestone**, analysis, 3042.

**Limonic**, detmn., in orange juice, spectroph., 2728.

**Lindane**. (See *Cyclohexane, hexachloro-*)

**Linseed oil**, detmn. of carotenoids and phenophytins in, column chrom. - spectroph., 980.

**Lipids**. (See also *Fats and fatty oils; Glycerophosphonolipids; Phospholipids*.)

bacterial, sepn. of branched-chain and linear compounds, column chrom., 3142.

blood plasma, sepn., by TLC, 832.

detection, in biol. tissues, by TLC, 833.

detmn., by GLC, methanolysis of, method and apparatus for, 3146.

in biol. fluids and tissues, by TLC, 2043.

in blood serum, by TLC, 2042.

trans-esterification for, 3147.

in faeces, by solvent extraction - gravim., 2044.

of diols and triols in, by GLC, acetylation process for, 2041.

identn. of epoxidised glycerides in, by TLC, spray reagent for, 3145.

milk, sepn., by TLC, 834.

plant, detmn. of galacto- and sulpho-, column-thin-layer chrom. - spectroph., 2046.

purification of extracts of, by Sephadex LH-20 column, 831.

sepn., from blood serum, by preparative TLC, 3148.

**Lipoproteins**, identn., on electropherograms, staining reagent for, 1463.

sepn. from blood serum, electroph. on cellulose acetate strips, 2089.

**Lithium**, detmn., in blood serum, atomic-absorption or atomic-emission spectroph., 1992.

flame photom., 797.

in refractory oxides, spectrogr., 2352.

simult. with Na, flame photom., 561.

sepn. of  $\text{Li}^+$  from  $\text{K}^+$  and  $\text{Na}^+$ , ion-exchange chrom., 2353.

**Lithium chloride**, analysis of mixtures of, with NaCl, by two-dimensional electrophoresis, 1133.

**Lithopone**, detmn. of Zn in, complexom., 1979.

**Liver**, detmn. of Bi, Pb and Hg in, polarogr., after cementation on zinc, 1989.

**Lubricants**, detmn. of N in nitrated oils for, 1947.

test for thermo-oxidative stability of, 2494.

**Lubricating oils**, analysis, by TLC, 3C.

**Lucerne root**, detmn. of non-structural carbohydrates in aq. extracts of, comparison of hydrolysis procedures for, 988.

**Luminescence**, electro-generated, concn. - intensity relationships in, 467.

thermo-, measuring device for, 489.

**Luminol**, composition of, 3321.

**Lysergide**, detmn., in pharm. products, by GLC, 1527.

spectroph., 1528.

screening test for, on filter-paper impregnated with 4-dimethylaminobenzaldehyde, 933.

**Lysine**, detmn., in foods, column chrom. - polarogr., 1355.

sepn. of dinitrophenylene and dinitrophenyl deriv. of, ion-exchange chrom., automated, 3169.

**MCPA**, detmn., in mixtures with related herbicides, by GLC as methyl esters, 2739.

**MCPB**, detmn., in mixtures with related herbicides, by GLC as methyl esters, 2739.

**Macroglobulins**. (See *Globulins*.)

**Magnesium**, detmn., by solvent extraction - photom., 2892.

gravim., 1749.

study of pyrophosphate method, 55.

in biol. materials, simult. with Ca, Cu, Mn and Cr, spectroph., elimination of interferences in, 285.

in biol. tissues, by spectroph. titration with EDTA, 284.

in blood serum, comparison of methods for, 2590.

photom., 283.

in minerals, ores or rocks, volum., 2893.

in natural water, simult. with Ca, complexom., 1006.

in other metals, atomic-absorption spectroph., 56.

in presence of Ca, atomic-absorption spectroph., 2896.

complexom., interferences in, 2895.

and  $\text{PO}_4^{3-}$ , complexom., 575.

spectroph., 574.

sepn. from Ca, by ion exchange, 579.

from other metals, on  $\text{Sn}^{\text{IV}}$  phosphate and tungstate papers, 1112.

**Magnesium, reagents for**, dilituric acid, 1749.

Eriochrome black T, 675, 2892.

**Maize**, detmn. of nucleotides in extracts of, ion-exchange chrom., 2099.

of oil in living tissues of, by wide-line NMR, 397.

seedlings of, detmn. of nucleotides in, paper chrom. - spectroph., 1474.

**Malathion**, detection, in poisoned animal tissues, by TLC, 2024.

detmn., in rice, in presence of aldrin and DDT, gas chrom. or colorim., 960.

spectroph., with use of fluoroboric acid, 997.

sepn. from plant extracts by TLC and detmn., spectroph., 3268.

**Maleic acid**, detmn., simult. with acrylamide, polarogr., 2574.

sepn. from fumaric acid, ion-exchange chrom., 1331.

**Maleic anhydride**, analysis of mixtures with tetrahydrophthalic anhydride, thermogravim., 728.

**Maleimide**, *N*-substituted deriv. of, TLC of, 3084.

**Malonaldehyde**, detmn., in biol. tissues, as 2-hydroxypyrimidine, by chrom. and spectroph. methods, 2035.

**Malonic acid, methyl-**, detmn., in urine, ion-exchange chrom. - colorim., 2617.

**Malt wort**, analysis for total N,  $\alpha$ -amino-N and carbohydrates, simult., automated, 2198.

detmn. of coaguable-N in, comparison of methods for, 1566.

of oxidation state of, review of methods for, 2199.

of phenolic compounds in, by GLC of trimethylsilyl deriv., 974.

of sugars in, by GLC of trimethylsilyl deriv., 973.

**Maltodextrin**, TLC of, 2031.

**Maltose**, detmn., by periodate oxidation, 3062.

**Mandarin oil**, identn. of monoterpenes in, gas chrom. - i.r. spectroph., 949.

- Mandelic acid**, detmn., potentiom., 245.  
DL-, resolution of, on optically active high polymers, 1940.  
esters of, diastereoisomeric, sepn., ion-exchange chrom., 3071.  
—, **3,4-dihydroxy-**, detmn., in urine, simult. with 3,4-dihydroxyphenylacetic acid, 3157.  
**Maneb**, degradation products of, detmn., in fungicides, by TLC, 998.  
**Manganese**, detmn., atomic-absorption spectroph., interference of Fe in, 3020.  
in biol. materials, simult., with Mg, Ca, Cu and Cr, flame spectroph., elimination of interferences in, 285.  
in feeding-stuffs, ion-exchange chrom. - spectroph., 987.  
in milk and cheese, by solvent extraction - spectroph., 375.  
in minerals, ores or rocks, by neutron activation, 3012.  
in natural water, atomic-absorption spectroph., 3278.  
in plants, simult. with Fe and Zn, X-ray spectrogr., 2599.  
in presence of Co, potentiom., 658.  
of Zn, complexom., 581.  
in rubber fillers, spectroph., 788.  
of Co, Cu, Fe, Pb and Zn in, by ion exchange, 1258.  
potentiom., 1257.  
**Manganese reagents for**, bis(4-dimethylamino-phenyl)methane, 375.  
formaldoxime, 788.  
8-mercaptoquinoline, 1162, 1165.  
**Manganese ores**, detmn. of Co, Cu, Fe, Pb and Zn in, by ion exchange, 1258.  
**Manganin**, analysis, 2888.  
**Mannitol hexanitrate**, identn., in pharm. prep., by TLC, 1534.  
**Mannose**, detmn., spectroph., 301.  
**Laphenamide**, detmn., spectroph., 361.  
**Margarine**, detmn. of butter fat in, by transesterification and GLC, 948.  
of vitamin A and  $\alpha$ - and  $\beta$ -carotenes in, column chrom. - spectroph., 2717.  
**Larine sediments**, detmn. of Cu, Pb, Ni, V and Co in, spectroph., 3281.  
**Mass spectrometry**, detection of 'non-existent' molecular ions by, 1677.  
device for normalising spectra in, 3339.  
emitters for, comparison of, 2831.  
gelatin-free ion-sensitive plates for, 1674.  
isotopic analysis by peak integration by, 3337.  
measurement and interpretation of metastable maps in, 1678.  
of gases, by selective photo-ionisation, 2834.  
of labelled compounds, chemical degradation in, 2835.  
processing of real-time data in, 2312.  
production of small holes in glass tubing for, 3336.  
pulse-source, technique for ion-trapping in, 2833.  
report of symposium on, 2849.  
response of ion-sensitive plates in, 1673.  
study of fragmentation patterns by beam-modulation, 2311.  
thermal-source mounting for, 2832.  
time-of-flight, large-area counting system for, 1678.  
magnetic electron multiplier for, circuit for, 2836.  
recording of spectra during reactions, 2837.  
review, 1675.  
**Mass spectrometry—continued**  
use of computers in, 1679.  
of  $^2\text{H}$ -labelled trimethylsilyl deriv. in, 2310.  
of ion-beam chopper in, 1672.  
**Meat**, detmn. of mercapto-groups in, spectroph., 2173.  
of rancidity of fat of freeze-dried, spectroph., by thiobarbituric acid value, 2174.  
**Meat extracts**, composition of, 2710.  
detmn. in beef cubes, by TLC, 2711.  
**Meat products**, detmn. of lactose in, enzymic - spectroph., 1540.  
**Mecoprop**, detmn., in mixtures with related herbicides, by GLC as methyl esters, 2739.  
**Melamine**, detmn., spectroph., 2575.  
**Melatonin**, TLC and GLC of, 2648.  
**Melibiose**, detmn., by periodate oxidation, 3062.  
**Melting-points**, detmn., automatic temp.-measurement in, 1720.  
effect of protective environments on, 3367.  
use of photo-electric recording in, 1717.  
**Menadione**. (See *Menaphthone*.)  
**Menaphthone**, detmn., in pharm. prep., by GLC, 2145.  
**Menazon**, sepn. from *OO*-dimethyl *S*-(methyl-carbamoyl)methyl phosphorothioate, paper or thin-layer chrom., 961.  
**Menhaden oil**, sepn. and analysis of trienoic and tetraenoic acids in, by GLC and TLC, 3116.  
**Meprobamate**, detmn., in pharm. prep., by NMR, 2148.  
spectroph., 358.  
identn., in urine, by TLC, 1416.  
**Mercapto-groups**, detmn., in biol. tissues, polarogr., 2597.  
in flour, paper chrom. - radiom., 1539.  
in meat, spectroph., 2173.  
u.v. spectroph., 706.  
**Mercaptopurine**, detmn., in blood serum, spectrofluorim., 1423.  
**Mercudaramide**, identn., by TLC, 2701.  
**Mercurophylline**, identn., by TLC, 2701.  
**Mercury**, complex with benzimidazole, study of, 62.  
detection of  $\text{Hg}^I$ , paper chrom., 552.  
detmn., atomic-absorption spectroph., 1157.  
interference of Co in, 2904.  
by isotope dilution, 1791.  
in air, reflectance spectroph., on paper strips, 2751.  
in biol. materials, in presence of As, Br, Sb and Se, by neutron activation, 290.  
ion-exchange chrom. - photom., 3127.  
in urine, colorim., 286.  
and liver, polarogr., after cementation on zinc, 1989.  
of impurities in, mass spectrom., 68.  
of  $\text{Hg}^I$ , gravim., 1156.  
of  $\text{Hg}^{II}$ , amperom., 707.  
by solvent extraction - spectroph., 66.  
gravim., 65, 2903.  
in presence of Ag, polarogr., 50.  
potentiom., by catalysis of  $\text{Ce}^{IV}$  -  $\text{As}^{III}$  reaction, 571.  
spectroph., 585.  
volum., 644.  
sepn. of  $\text{Hg}^{II}$  from other metals, by ion exchange, 2905.  
on  $\text{Sn}^{IV}$  phosphate and tungstate papers, 1112.  
—, **ethyl-**, chloride, detmn., photom., 2527.  
—, **phenyl-**, acetate, detmn., in fungicides, volum., 407.

- Mercury, reagents for**, antipyrine deriv., 65, 585.  
benzoylacetanilide, 2903.  
dithizone, 286.  
tris-2,2'-bipyridyl - FeII, 66.
- Mercury compounds**, detection, on ion-exchange paper, 67.
- Meroquinolamide**, identn., by TLC, 2701.
- Mersalyl**, identn., by TLC, 2701.
- Mestranol**, detmn., in pharm. tablets, colorim. or automated fluorim., 2142.
- Metals.** (See also *Cations*.)  
analysis of binary mixtures of, by differential rates of ligand-substitution reactions, 1127.  
complexes with ascorbic acid, absorption spectra of, 543.  
with 1,2-bis(salicylideneamino)propane, study of, 1103.  
with complexans, sepn., by TLC, 2342.  
with cyanides, solvent extraction of, with quaternary  $\text{NH}_4$  compounds, 1120.  
with diethyldithiocarbamic acid, detmn. of extraction constants of, 1761.  
solvent extraction of, 28.  
with  $oo'$ -dihydroxyazo dyes, polarographic behaviour of, 1746.  
with 8-hydroxyquinoline, sepn. from free 8-hydroxyquinoline, by zone melting, 1760.  
mass spectrometry of, 551.  
with methylthymol blue, study of, 31.  
with 2-(2-pyridylazo)phenol and 4-(2-pyridylazo)phenol, study of, 1102.  
detmn., by exchange reaction of chelates and spectroph. rate measurement, 17, 18.  
catalytic method for, 2866.  
in biol. materials, by neutron activation and sepn., column chrom., automated, 1985.  
foods and water, polarogr., review, 1990.  
in plant tissues, comparison of methods for, 1988.  
in presence of surfactants, by anodic-stripping voltammetry and neutron activation, 492.  
of gases in, spectrogr., by isotopic equilibration, 2329.  
of N in, photom., 2422.  
potentiom., 2423.  
of S in, by combustion - photom., 1227.  
potentiom. complexom., 1118.  
iodide complexes of, distribution coeff. of, between inorg. acid soln. and Amberlite LA-2, 1752.  
ion-exchange behaviour of, in mixed solvents, 34.  
noble, sepn., review of methods of, 29.  
non-ferrous, analysis, 1967 annual review, 1734.  
sepn. and detmn., colorim., scheme for, 548.  
by solubilisation TLC, 1122.
- Meteorites**, analysis, by neutron activation, 178.  
detmn. of alkali, alkaline-earth- and rare-earth-metals in, 180.  
of Al, Au, Mn and V in, by neutron activation, 687.  
of  $^{26}\text{Al}$  in, by  $\gamma, \gamma$ -coincidence spectrometry, 181.  
of Sb in, by neutron activation, 632.  
of Br, Cl and I in, by neutron activation, 188.  
of Ca, Cr, Co, Mn and Ni in, X-ray spectrogr., 688.  
of Cl in, by neutron activation, 187.  
of Ga, Ge, Ir and Ni in, by neutron activation, 190.  
of I, Te and U in, by neutron activation, 189.  
of Li and its isotopic composition in, mass spectrom., 179.
- Meteorites, determination—continued**  
of Os and Re in, by neutron activation, 659.  
of Si in, by neutron activation, 182.
- Metformin**, detection, in urine, by TLC, 1422.
- Methaemoglobin**, absorption spectra of, cause of variations in, 880.
- , **cyano-**, detmn., in blood, spectroph., 331.  
of extinction coeff. of, at 548 nm, 888.  
evaluation of international reference soln. spectroph., 333.
- Methandriol**, identn. of pseudopolymorphic and true polymorphic forms in, by i.r. spectroph. and thermo-microscopic methods, 2139.
- Methane**, detection, in air, apparatus for, 1616P.  
detmn., in mixtures with other gases, by GLC, 2337.  
of other hydrocarbons in, in parts per 10<sup>6</sup> range, by GLC, 2502.  
pyrolysis products of, aromatic, analysis, by GLC - mass spectrom., 750.  
sepn. from perdeuteromethane by use of porous polymer beads, 1915.
- , **tris(difluoroamino)fluoro-**, sepn. from related compounds, column chrom., 1333.
- Methanol**, detmn. of  $\text{NH}_4^+$  and methylamines in spectroph., 1933.  
of impurities in, by GLC, 2511, 3058.
- Methaqualone**, detmn., in pharm. tablets, polarogr., 927.
- Methergin.** (See *Methylergometrine*.)
- Methionine**, sulfoxide and sulphone, sepn. from their Se analogues, by GLC of trimethylsilyl deriv., 3170.
- Methyl groups**, detmn. of functional groups containing, by NMR, 708.  
N-, detmn., i.r. spectroph., 2501.
- Methylergometrine**, detmn., in soln., thin-layer chrom. - spectrofluorim., 1420.
- Methysergide**, detmn., in soln., thin-layer chrom. spectrofluorim., 1420.
- Micro-organisms**, characterisation, by GLC of metabolic products of, 1982.
- Microscopy**, atom-probe field ion, combination with mass spectrometry, 2314.  
metallographic, control of temp. of stage in, 283.
- Milk**, detection of added Cl<sup>-</sup> in, colorim., 1542.  
detmn. of Ca in, complexom., 373.  
of carbaryl in, radiom., 2190.  
of hydroperoxides in, diagnostic agents for, 2587P.  
of Mn in, by solvent extraction - spectroph., 375.  
of N in, by Kjeldahl method, apparatus for, 374.  
comparison of automated Dumas and Kjeldahl methods for, 2205.  
of organochlorine pesticides in, by extractive distillation and GLC, 956.  
of organophosphorus pesticides in, by GLC temp.-programmed, comparison of column for, 1589.  
of protein in, by dye-binding, 3245.  
of rubber-compounding ingredients in, chrom., 1545.  
of sulphonamides in, spectroph., 2725.  
of trichlorphon in, by assay of anticholinesterase activity of, 1559.  
extraction of carboxymethylcellulose from, as detmn., spectroph., 2720.  
of organochlorine pesticides from, comparison of procedures for, 390.  
sepn. of lipids of, by TLC, 834.  
of proteins of, gel electroph., 1543, 1544.



- Milk, dried**, detmn. of  $H_2O$  in, comparison of toluene distillation and Karl Fischer methods for, 2714.
- Milk products**, detmn. of N in, by Technicon Kjeldahl apparatus, 374.
- Minerals, ores and rocks**. (Most references to the detection or determination of elements in will be found under those elements. See also *Clays*.) analysis, by electron probe, 2483.
- ion-exchange chrom., spectrogr. monitoring in, 2949.
- review of chromatographic methods for, 685.
- scheme for, 689.
- spectrogr, 1287.
- use of DSA 24 instrument in, 2948.
- of laser micro-probe in, 1290.
- X-ray spectrogr., 89.
- calibration of intensity data for, 2950.
- dating of, by detmn. of  $^{40}Ar$ , gasom., 2345.
- detmn. of majorelements in, X-rays spectrogr., 2484.
- of org. C in, apparatus for, 2497.
- of heavy elements in, X-ray spectrogr., correction for absorption of incident radiation in, 1084.
- of volatile elements in, spectrogr., 183.
- dissolution of, use of ion exchangers in, 1820.
- Mössbauer spectra of, 2485.
- phosphate, detmn. of rare-earth metals in, 102.
- sampling of, errors in, 176.
- for atomic-absorption spectrophotometry, 1116.
- sulphide, analysis, 2991.
- detmn. of Se and Te in, ion-exchange chrom., 2994.
- of trace elements in, atomic-absorption spectrogr., 3043.
- Litragyna alkaloids**, detmn., by TLC, 2C, 3203.
- lixing**, during reactions, method for, 2771.
- Iobam**. (See *Carbamic acid, methyl-, 4-benzo[b]-thien-4-yl ester*.)
- loisture**. (See *Water*.)
- Iolybdate**, detmn., volum., 1857.
- Iolybdenite**, concentrates of, detmn. of Re in, spectrogr., 137.
- detmn. of Re in, spectrogr., 656, 3005.
- Iolybdenum**, complexes of  $Mo^{VI}$  with  $SCN^-$ , use of, in detmn. of reducing agents, 535.
- detection, spot test for, 1855.
- detmn., atomic-absorption spectrogr., suppression of interferences in, 2447.
- in concentrates, X-ray spectrogr., 1240.
- in minerals, ores or rocks, colorim., field kit for, 185.
- photom., 1856.
- in natural water, comparison of methods for, 3277.
- of gases in single crystals of, effect of surface gases on, 2449.
- of impurities in, by neutron activation, 129.
- of  $Mo^{VI}$ , oscillopolarogr., 1756.
- potentiom., 1858.
- polarogr., 655, 1241.
- in aspartic acid soln., 3001.
- spectrogr., 125, 654, 3000.
- volum., 125.
- polarography of  $Mo^{VI}$  in different media, 2448.
- sepn. from Fe, by ion exchange, 3003.
- from Nb, Ta and W, column chrom., 1758.
- from Nb, V and W, ion-exchange chrom., in HCl-HF soln., 1757.
- from Re, by solvent extraction, 3002.
- of  $Mo^{VI}$  from other metals, and identn., by TLC, 655.
- on  $Sn^{IV}$  phosphate and tungstate papers, 1112.
- Molybdenum, reagents for**, ferron, 1756.
- 8-hydroxy-7-iodoquinoline-5-sulphonic acid, 655.
- 8-hydroxyquinoline-5-sulphonic acid, 655.
- 8-mercaptopquinoline, 1220.
- 1,10-phenanthroline, 654.
- Phenylazoxine S, 3000.
- toluene-3,4-dithiol, 1842, 1856.
- Molybdenum alloys**, analysis of Mo-W, gravim. - complexom., 127.
- Molybdenum(VI) oxide**, detmn. of As in, spectrogr., 3004.
- Molybdogallates**, detmn. of Ga in, complexom., 77.
- Monomycin**, detmn., in biol. tissue, by diffusion in agar, effect of heat treatment in, 1415.
- Monosaccharides**. (See *Saccharides*.)
- Morphine, ethyl-**. (See *Ethylmorphine*.)
- Mössbauer effect**. (See *Spectrofluorimetry, gamma-ray nuclear resonance*.)
- Mucopolysaccharides**, acid, detmn., in vascular tissue, column chrom. - electroph. - densitom., 1428.
- detmn., in urine, column chrom., 308.
- Mucoproteins**, detmn., in duodenal fluid, paper electroph. - colorim. with use of a photom. scanner, 2084.

## N

- Nalorhine**, detmn. of impurities in, paper chrom., 1495.
- Naphazoline**, detmn., in pharm. prep., by GLC, 1520.
- Naphthalene**, alkyl deriv. of, sepn. from alkyl-benzenes, evaluation of solvents for, 742.
- detmn., in air, colorim., 1002.
- laser-excited Raman spectrum of, 250.
- , **1-methyl-**, analysis of mixtures with heptane or hexadecane and isopropylbenzenes, by GLC, 3057.
- Naphthalenesulphonic acid, 1-hydroxy-**, identn. of isomers of, by TLC, 1350.
- Naphthalene-1-sulphonic acid, 7-hydroxy-8-(2-pyridylazo)-**, chelating properties of, 1738.
- , **7-hydroxy-8-(2-pyrimidylazo)-**, chelating properties of, 1738.
- 2-Naphthoic acid, 3-hydroxy-**, sepn. from 5- and 7-sulpho-deriv. of, paper chrom., 251.
- 1-Naphthol, 2-(2-pyridylazo)-**, chelating properties of, 1738.
- , **2-(2-pyrimidylazo)-**, chelating properties of, 1738.
- 1-Naphthylamine**, detmn. of 2-naphthylamine in, by GLC, 1944.
- Narcotine**. (See *Noscapine*.)
- Natural gas**, detection of leakage of, by hydrocarbons in added thiols, by GLC, 756.
- Nemagon**. (See *Propane, 1,2-dibromo-3-chloro-*.)
- Neodecanoic acid**, detmn., in cottonseed, by TLC as ester, 985.
- Neodymium**, detmn., amperom., as tungstate, 2929.
- atomic-absorption spectrogr., 2928.
- in presence of other elements and  $HNO_3$ , photom., 599.
- Neodymium oxide**, detmn. of impurities in, spectrogr., 1176.
- Neospiramycin**, detmn., in chicken tissues, column - thin-layer chrom. - microbiol., 2607.
- Neptunium**, complexes of  $Np^V$  and  $Np^{VI}$ , polarography of, 1183.
- detmn. of  $^{238}Np$  produced by irradiation of U, by beta-ray counting, 1813.
- Neptunium alloys**, analysis of U-Np, coulom., 608.
- Neutron irradiation**. (See under *Radioactivation analysis*.)

- Neutrons**, distinction from gamma-rays, by org. scintillators, 2847.  
generator for, beam centring in, 3359.
- Nickel**, detmn., atomic-absorption spectroph., interference of Fe in, 3020.  
catalytic method for, 673.  
complexom., improvement of murexide end-point in, 164.  
in boiler water, by solvent extraction - spectroph., 3282.  
in Co - Ni magnetic films, photom., 3029.  
in Kovar alloy, by ion exchange, 3030.  
in presence of Co, by internal electrolysis, 674.  
in steel, photom., 3025.  
of Bi in, spectroph., 2886.  
of Co and Zn in, cathode-ray polarogr., 3036.  
of Cu in, photom., 1144.  
of Cu, Fe and Si in, 1881.  
of Fe in, spectroph., 677.  
of Mg in, photom., 675.  
of Te in, polarogr., 1236.  
of Sn in, by isotopic exchange, 676.  
spectroph., 1801, 3031, 3032.  
polarogr. behaviour of  $Ni^{II}$  in presence of triethylenetetramine, 1281.  
production products of, detmn. of Co in, by solvent extraction - photom., 1282.  
sepn. from  $Co^{II}$ , by ppt. flotation, 3033.  
from interfering metals by TLC, and detmn., reflectance-spectroph., 2341.
- Nickel**, reagents for, diethylamino-[3-(1-methyl-2-piperidyl)-2-pyridylazo]phenol, 3031.  
5-dimethylamino-2-(2-thiazolylazo)phenol, 3032.  
dithio-oxalic acid, 3025.  
picolinaldehyde 2-quinolyldrazone, 2341.
- Nickel alloys**, analysis of Ni - Cr - Fe, X-ray spectr., agreement with theory, 165.  
detmn. of B in, spectroph., 3035.  
of S in, by combustion - volum., 1228.  
electron-probe micro-analysis of Ni - Cu, effect of atomic number in, 47.
- Nickel dimethylglyoximate**, pptn. of, by urea, use of urease in, 1880.
- Nickel(II) oxide**, detmn. of  $Ni^{III}$  in, volum., 3034.
- Nicotin amide**, detection, in nicotinonitrile, by TLC, 3185.  
detmn., spectroph., 1479.
- , *N*-( $\alpha$ -methylphenethyl)-. (See *Phenatine*).
- Nicotinic acid**, detection, in nicotinonitrile, by TLC, 3185.  
detmn., in drug mixtures, spectroph., 2144.  
sepn. from picolinic and quinolinic acids, by TLC, spray reagents for, 318.
- Nicotinonitrile**, detection of nicotinic acid and its amide in, by TLC, 3185.
- Niobium**, detmn., atomic-absorption spectroph., 1753.  
complexom., 2989.  
in metals and alloys, photom., 2437.  
in stainless steel, spectroph., 668.  
in tantalum, by solvent extraction - spectroph., 114.  
of Co, Cu, Fe, Ni and Zn in, by ion exchange - spectroph., 1222.  
of Mo in, photom., 1220.  
and W in, photom., 1842.  
of Ta in, by solvent extraction - photom., 1219.  
of W in, a.c. polarogr., 1221.  
of Zr in, by adsorption on methylenebis-(dihexylphosphine oxide), 1218.  
sepn. from Mo, Ta and W, column chrom., 1758.  
from Mo, W and V, ion-exchange chrom., 1757.  
solvent extraction of, from HCl soln., 111.
- Niobium**, reagents for, chlorsulphophenol S, 2437.  
gallic acid, 668.  
phenylfluorone, 114.
- Niobium(V) oxide**, detmn. of Mo and W in, photom., 1842.  
together with  $Ta_2O_5$ , in minerals, gravim., 2438.
- Nitrate**, detmn. in feeding-stuffs and natural water, spectroph., 401.  
in foods, colorim., precision of the 4-(1-naphthylazo)-1-naphthylamine method for, 2167.  
in presence of  $NO_2^-$ , coulom., 1831.  
spectroph., 1203.  
of other salts or acids, non-aq. potentiom., 98.  
in soil, comparison of methods for, 2737.  
spectroph., 1202.  
with  $NO_2^-$ -selective electrode, 625.
- Nitrazepam**, identn., in urine, by TLC, 1416.
- Nitric acid**, B.S.I. specification for, 2425.  
detmn., in presence of cations, by ion exchange spectroph., automated, 2457.  
of Cd, Co and Zn in, oscillopolarogr., 1201.  
of Cd, Cu, Pb and Zn in, anodic-stripping voltamm., 2426.  
of Cd, Pb and Zn in, anodic-stripping voltamm., 2336.  
of Th and U in, by neutron activation, 1999.  
spectroph., 1335.  
esters of, detmn., spectroph., 1335.
- Nitrite**, detmn., coulom., 2966.  
in feeding-stuffs and natural water, 401.  
in foods, colorim., precision of the 4-(1-naphthylazo)-1-naphthylamine method for, 2167.  
in presence of other salts or acids, non-aq. potentiom., 98.  
photom., 1204, 1830.  
spectroph., 99, 626.  
volum., 2441.
- Nitrocellulose**, alcohol-damped, detmn. of alcohol and  $H_2O$  in, 2576.
- Nitrofurantoin**, detmn., in oral suspensions, in presence of chloramphenicol, microbiol. turbidim., 3227.
- Nitrogen**, detection, in org. compounds, ultra micro, 1904.  
detmn., by Kjeldahl method, apparatus for, 422.  
in biol. fluids, automated, comparison with Kjeldahl technique, 2595.  
in biol. materials, spectroph., 1406.  
in fertilisers, spectroph., automated, 2211.  
in metals, photom., 2422.  
potentiom., 2423.  
in org. compounds, by sealed-tube combustion, 202.  
modified Kjeldahl method for, 701.  
in soil or milk, comparison of methods for, 2205.  
GLC of, on mol. sieves, abnormal behaviour of, 1639.  
industrial, B.S.I. specification for, 2421.
- Nitrogen oxides**  
—  $N_2O$ , detmn., in mixtures with N or  $NO$ , by GLC, 1205.  
—  $NO$ , detmn., photom., 2424.  
—  $N_2O_4$ , detmn. of  $NO$  in, spectroph., 1829.
- Nitroglycerin**, detection, 278.  
detmn. of  $NO_2$  in, spectroph., 1400.
- Nitrosamines**, detection, in foods, comparison of methods for, 3242.  
in tobacco smoke, by solvent extraction and TLC or GLC, 855.
- N-Nitroso-compounds**, detmn., iodim., 1912.

- Noradrenaline.** (See also *Catecholamines.*)  
 detmn., fluorim., 2641.  
 in urine, simult. with adrenaline and dopamine, review of methods for, 3157.  
 sepn. from adrenaline, by GLC of trimethylsilyl deriv., 315.  
 in biol. materials, glass-fibre paper chrom., 856.
- ,  **$\alpha$ -methyl,** detmn. of isomers of, fluorim., 3134.
- , **3-O-methyl-**, detmn., by GLC of triacetyl deriv., 316.
- Nordihydroguaiaretic acid,** detection, in fats, by TLC, spray reagent for, 1553.  
 detmn., semi-quant., ring colorim., 955.
- Normetanephine.** (See *Noradrenaline*, 3-O-methyl-.)
- Noscapine,** detmn., in opium, simult. with papaverine, thin-layer chrom. - spectroph., 1497.  
 in pharm. prep., colorim., 351.  
 thin-layer chrom. - spectroph., 2484.
- Nuclear reactor coolants,** detmn. of  $^{58}\text{Co}$  and  $^{60}\text{Co}$  in, by solvent extraction, 420.  
 of Fe, Cu, Ni, Co and Zr in, ion-exchange paper chrom. - X-ray spectrogr., 2766.  
 sepn. of Kr and Xe in, for gamma-counting, 1129.
- Nuclear reactor fuels.** (See also *Cermets.*)  
 analysis, 1967 annual review, 1734.  
 detmn. of S in U - Pu, amperom., 1814.
- Nucleic acids,** adsorption behaviour on charcoal, study of, 894.  
 analysis of structure of, 1967 annual review, 1734.  
 bases of, sepn., by GLC of trimethylsilyl deriv., 2101.  
 plant, extractability in phenol-acetic acid-water, study of, 876.  
 ion-exchange chrom., 895.  
 sepn., column chrom., 1471.  
 ion-exchange chrom., 895.  
 paper and thin-layer chrom., 3177.  
 $^3\text{H}$ -labelled, liquid scintillation, counting of, method for, 893.
- , **deoxyribo-**, bases of, detmn., review of methods for, 896.  
 detmn. of adenine-guanine ratio in, ion-exchange chrom. - spectroph., 1472.  
 extraction from biol. tissues, procedure for, 2097.
- , **ribo-**, analysis, ion-exchange chrom. - spectroph., 2660.  
 detmn. of base ratio of, thin-layer chrom. - spectroph., 897.  
 sepn., from proteins, by TLC on nitrocellulose, 3184.  
 gel electroph., on acrylamide, and detmn., densitom., 2659.
- Nucleosides,** sepn., by GLC of trimethylsilyl deriv., 2101.  
 from nucleic acid bases and nucleotides, column chrom., 2098.  
 of mono-, pyro- and tri-phosphates of, by TLC, 1475.
- , **ribo,** detmn., ion-exchange chrom. - spectroph., 3183.  
 sepn., in presence of ribonucleotides, paper chrom., 2657.
- Nucleotides,** detmn., in maize seeds, ion-exchange chrom., 2099.  
 in maize seedling extracts, paper chrom. - spectroph., 1474.  
 ion-exchange - thin-layer chrom., 2100.  
 of P in, by GLC of trimethylsilyl deriv., 805.  
 oligo-, sepn., by ion-exchange TLC on polyethyleneimine-cellulose, 1476.  
 sepn., by GLC of trimethylsilyl deriv., 2101.  
 from nucleosides, column chrom., 2098.  
 ion-exchange chrom., 335.
- Nucleotides,—continued**  
 triphosphopyridine, detmn., enzymic - spectroph., 1458.
- , **deoxyribo-**, sepn., by ion-exchange TLC on polyethyleneimine-cellulose and detmn., spectroph., 1473.  
 from ribonucleotides, paper chrom., 2658.
- , **ribo-**, sepn., from deoxyribonucleotides, paper chrom., 2658.  
 from ribonucleosides, paper chrom., 2657.
- Nux vomica,** identn. of minor alkaloids in, 1C.  
 sepn. of minor alkaloids of, column chrom., 2131.
- Nylon.** (See *Polycaprolactam.*)

## O

OPSM. (See *Flotation agents.*)

**Ochratoxin,** detmn., column - thin-layer chrom., 2183.

**Octadecenoic acid,** methyl ester, sepn. of isomers of, by TLC, 731.

**Oestradiol,** benzoate, detmn., in mixtures with progesterone and testosterone propionate, by TLC, 2140.

detmn., in blood plasma, radiom., use of triply-labelled deriv. in, 2636.

identn. of pseudo and true polymorphic forms in, i.r. spectroph., 2139.

—, **ethynyl-**. (See *Ethinyloestradiol.*)

**Oestrogens,** detmn., in blood plasma, by TLC, and GLC of the heptafluorobutyrate deriv., 1445.

in oral contraceptives, in presence of progestogens, thin-layer chrom. - i.r. spectroph., 2141.

sepn. of metabolites of, in urine, by isotope-deriv. formation and column - thin-layer chrom., 2052.

**Oestrone,** detmn., in blood plasma, radiom., use of triply-labelled deriv. in, 2636.

**Oilseeds,** analysis, B.S.I. methods for, 402.

**Oleandomycin,** TLC of, on iron-free silica gel, 3211.

**Olefins.** (See under *Hydrocarbons.*)

**Oleic acid,** alkyl esters, oxidised, sepn., comparison of chrom. methods for, 2C.

**Oleoresin,** detmn., in pine tissues, by GLC, solid sampler for, 2610.

**Oleuropein,** detmn., in olives, spectroph., 379.

**Oligomers,** polyesters, sepn., by TLC, 780.  
 of linear and non-linear, as urea adducts, 781.

styrene, fractionation of, gel-column chrom., 2569.

**Olive oil,** esterified, analysis, enzymic - thin-layer - gas chrom., 3256.

isolation of fluorescent substance from, by TLC, 981.

**Olives,** detmn. of oleuropein (bitter constituent) in, spectroph., 379.

**Opium,** detmn. of alkaloids in, column chrom., 1C.  
 of noscapine and papaverine in, thin-layer chrom. - spectroph., 1497.

sepn. of active principles of, by TLC at raised temp. or reduced pressure, 1492.

**Opium alkaloids,** sepn., in Pantopon-type prep., by TLC and detmn., colorim., 2681.  
 TLC of, 1494.

**Opoponax oil,** identn. of sesquiterpenes in, by GLC, 767.

**Optical materials,** i.r. transmittance of, 477.

**Optical rotation.** (See *Polarimetry.*)



**Optical rotatory dispersion**, adaptation of Beckman DU spectrophotometer for measurement of, 2838.  
 attachment to spectropolarimeter for measurement of, 488.  
 measurement of, apparatus for, 1682.

**Orange juice**. (See under *Fruit juices*.)

**Orange peel**, detmn. of polybutene in, by pyrolysis - GLC, 2723.

**Orange powder**, detmn. of amino-acids in, by GLC of methyl esters, 378.

**Ores**. (See *Minerals, ores and rocks*.)

**Organic bases**, detmn., coulomb., apparatus for, 2680.  
 in pharm. products, complexom., conditions for pptn. of metal-thiocyanate complexes in, 917.  
 volum., in acetonitrile, 196.  
 with Na tetraphenylborate, by two-phase titration, 1137.  
 picrates of, detmn., potentiom., in tetra-alkoxy-silane medium, 3083.

**Organic compounds**, containing labile methylene-group H atoms, colour reactions of, 3048.  
 detection of double-bonds in, by hydrogenation, 206.  
 detmn., in soln., by microwave resonance, 1895P.  
 of Br or Cl in, potentiom., 1302.  
 of Br, Cl and S in, by O-flask combustion, 1304.  
 of C and H in automated, 197.  
 gravim., automated, 1897.  
 of C, Br, Cl, I and S in, by combustion and GLC, 1298.  
 of C, H and F in, 1296.  
 of C, H and N in, by combustion, 1297.  
 by GLC, choice of oxidant for, 3051.  
 of C, H, halogens and S in, 3049.  
 of C, H, Hg and Cl or Br in, 3050.  
 of  $^{14}\text{C}$  and  $^3\text{H}$  in, errors in, 1300.  
 of Cl and S in, by O-flask combustion - photom., 199.  
 of double bonds in, by bromination, 1907.  
 of elements in, automated, 2496.  
 by O-flask method, interference of N oxides in, 203.  
 cooling device for samples in, 3286.  
 reduction of time of, 1898.  
 study of conditions of combustion in O, 695.  
 of halogens in, by combustion, automated, 1303.  
 of methyl-containing groups in, by NMR, 708.  
 of N in, by sealed-tube combustion, 1305.  
 of O in, gravim., 1301.  
 use of reduced Ni for removing S compounds, 3053.  
 of S in, in presence of P, by O-flask combustion, 1306.  
 of  $^3\text{H}$  in, 1299.  
 of unsatn. in, by hydrogenation, 1309.  
 of vinyl unsatn. in, 207.  
 of  $\text{H}_2\text{O}$  in, potentiom., 3053.

**heterocyclic**, analysis, by GLC, 229.  
 aza-, detmn., in atmospheric dust, paper chrom., 1598.  
 polycyclic, sepn., paper and thin-layer electroph., 755.  
 detmn. of C and H in, 697.  
 reciprocal transfer reactions of, study of, by GLC, 1353.  
 sepn., by TLC, 2C.  
 in air, by TLC, 1005.

**mass spectrometry** of, use of field-ionisation in, 194.  
 non-volatile, detmn., in aq. soln., by GLC, 2494.

**Organometallic compounds**, analysis, on one sample, 1900.  
 detmn., amperom., 2528.  
 of alkoxy-groups in, photom., 2500.  
 of Fe and P in, 2499.  
 $^3\text{H}$ -labelled, detmn., on paper chromatograms, by O-combustion in phials, 1046.

**Orotic acid**, detmn., in blood serum, spectroph., 3140.

**Orphenadrine**, detection, spectrofluorim., 2698.

**Osmium**, detection, atomic-absorption spectroph., 173.  
 detmn., simult. with Ru, by neutron activation, 679.  
 standardisation of soln. of  $\text{Os}^{\text{VIII}}$ , potentiom., 1889.

**Osmium(VIII) oxide**, detmn., volum., 1285.

**Osmometer**, automatic, 2252.

**Ospolot**. (See *Sulthiame*.)

**Ostruthol**, detmn., photom., comparative studies of, 919.

**Oubain**, detmn., in *Strophanthus gyatus* seed, thin-layer chrom. - spectroph., 2685.

**Oxalate**, detmn., potentiom., with an ion-exchange electrode, 2898.  
 volum., indicators for, 3069.

**Oxazepam**, detection, in urine, blood serum or c.s.f., by TLC, 2605.  
 detmn., in pharm. products, u.v. spectroph., 2694.

**Oxazolidine-2-thione**, deriv. of, detmn., in rapeseed meal, in presence of isothiocyanates, spectroph., 989.

—, **5-vinyl-**, detmn., in rapeseed, enzymic - u.v. spectroph., 398.

**2-Oxazoline, 4-benzylidene-5-oxo-2-phenyl-**, use of as standard in fluorimetry, 1092.

**Oxides**, detmn. of H, N and O in, by vacuum degassing, 37.

**Oxo-acids**, detection, paper chrom., reagents for, 2519.

**Oxygen**, detmn., by neutron activation, automated, 1223.  
 electrochemical cell for, 2842P.  
 portable apparatus for, 2241P.  
 in metals, by photon activation, 1186.  
 spectrogr., by isotopic equilibration, 2329.  
 and semiconductor materials, by isotopic equilibration, 1225.  
 in natural water, complexom., 414.  
 in nitrogen, by use of riboflavine - EDTA and irradiation, 624.  
 in org. compounds, gravim., 1301.  
 ultra-micro, 699.  
 use of He as carrier gas in, 1903.  
 in soln., by photosensitised autoxidation of histidine with Rose Bengal, 636.  
 comparison of methods for, 636.  
 dissolved, detmn., in fermentation vessels, membrane probes for, 2844.  
 industrial, B.S.I. standard for, 2440.  
 isotopic analysis of, by proton and deuterium activation, 1224.

**Oxypeucedanin**, detmn., photom., conditions for, 919.

**Oxyphenisatin diacetate**, detmn., in pharm. prep. in presence of phenolphthalein, thin-layer chrom. - spectroph., 2161.

**Oxytetracycline**, detmn., in presence of related antibiotics, photom., 2137.

**Ozone**, detmn., in air, by ozonolysis of polystyrene, 2223.  
 in aq. soln., spectroph., 1226.

## P

**Packaging materials**, detmn. of solvent residues in, by GLC, sampling apparatus for, 2165.

**Paints**, alkyl-resin, detmn. of phthalate esters in, i.r. spectroph., 1392.

analysis of solvents for, by GLC, 1980.

detmn. of  $\text{BaB}_2\text{O}_4 \cdot \text{H}_2\text{O}$  in, 3115.

of solvents in, 2582.

by GLC, 1393.

driers for, analysis, volum., 2583.

latex, detmn. of copolymers in, i.r. spectroph., 782.

under-water, analysis, i.r. spectroph., 1391.

**Palladiaz**, analysis of structural isomers of, 1943.

**Palladium**. (See also *Platinum-group metals*.)

complex of  $\text{Pd}^{\text{II}}$  with cyclohexane-1,2-dione dioxime, pptn. of, 3037.

detmn., amperom., 2864.

atomic-fluorescence spectroph., 33.

by solvent extraction - flame photom., 1885.

photom., 2480.

spectroph., 1283, 1887, 1888.

in minerals, ores or rocks, by fire assay - spectrogr., 1886.

spectroph., 191.

in presence of Cu or Ni, fluorim., 681.

of Ni, gravim., 172.

of other Pt-group metals, Au and Ag, by solvent extraction - spectroph., 1884.

of Ag in, by neutron activation, 3039.

photom., 3038.

spectroph., 171, 682, 683, 2481, 2482.

sepn. from Co and detmn., gravim., 680.

from fission products, by solvent extraction, 1284.

from Pt, by solvent extraction, 684.

**Palladium, reagents for**, acetophenone oxime, 683.

benzil  $\alpha$ -monoxime, 1283.

benzoselena-2,1,3-diazole, 2481.

Chrome Azurol S, 682.

diantipyrinylmethane, 2480.

di-2-pyridyl ketoxime, 2482.

hydroxyiminobenzotetronic acid, 680.

6-hydroxy-6-[3-(1-methyl-2-piperidyl)-2-pyridyl-azo]naphthalene-1-sulphonic acid, 3038.

monalzin, 2864.

1-(2-pyridylazo)-2-naphthol, 1884.

4-(2-pyridylazo)-1-naphthol, 1887.

bromo-deriv. of, 1887.

4-(2-pyridylazo)resorcinol, 171.

1-(2-thiazolylazo)-2-naphthol, 1888.

o-vanillin oxime, 172.

**Palladium, organic compounds of**, detmn. of Pd and Cl in, 1906.

**Palm-kernel oil**, analysis of fatty acids of, by urea fractionation and GLC of methyl esters of, 1571.

**Papaverine**, detmn., in opium, simult. with noscapine, thin-layer chrom. - spectroph., 1497.

hydrochloride, detmn., volum., 2129.

differentiation from Perparin, by TLC, 3195.

—, **ethyl-**. (See *Ethylpapaverine*.)

**Paper**, analysis of aq. extracts of, B.S.I. methods for, 774.

detmn. of ground wood in, i.r. spectroph., 1380.

of urea - formaldehyde resin in, i.r. spectroph., 1380.

sampling of, for testing, B.S.I. method for, 267.

**Paper pulp**. (See *Wood pulp*.)

**Paperboard**, analysis of aq. extracts of, B.S.I. methods for, 774.

sampling of, for testing, B.S.I. method for, 267.

**Paraffins**. (See *Hydrocarbons*, aliphatic.)

**Paramagnetic particles**, detmn., in flowing liquids, by NMR, 1128.

**Parathion**, detection, in animal tissues, by TLC; 2024.

detmn., in kale, solvent-extraction method for, 2193.

in vegetable oils, by extractive distillation and GLC, 1561.

spectroph., 997.

sepn. from plant extracts by TLC - spectroph. detmn. of P, 3268.

**Parathion-methyl**, detection, in animal tissues, by TLC, 2024.

**Particle size analysis**. (See also *Aerosols*.)

apparatus for, 527, 1724P.

automatically controlled, 3377.

applications of continuous electrophoresis in, 1728.

by Coulter counter, temp. control in, 1726.

by decanting, grade efficiency curves of, 1733.

by dielectric measurements, 3369.

by light absorption, influence of suspending medium on, 3372.

by sedimentation, of particles from 10 to 2000  $\mu\text{m}$ , 3373.

by X-ray scattering, 1730.

cross-sensitivity of Royco Aerosol Photometer PC 200 for, 1727.

data-converting apparatus for, automatic, 1725P.

distribution function for data recorded in size ranges, 3371.

of products of heterogeneous combustion, spectroph., 1729.

of crystalline substances, by X-ray scattering, 1731.

of metal powders, electrical method for, 3370.

problems of very fine particles in, 3368.

**Pectin**, detmn., in fruits, colorim., 306.

**Pemoline**, detmn., in pharm. tablets, by solvent extraction - spectroph., 3220.

**Penicillamine**, detmn., review of methods for, 326.

identn., spectroph., by rate of reaction with formaldehyde, 3173.

—, **acetyl-**, detmn., review of methods for, 326.

**Penicillin**, detection, in biol. tissues and urine, paper chrom. - microbiol., 1414.

types, identn., in pharm. prep., 1507.

—, **phenoxymethyl-**, detmn., coulom., 3208.

**Pentachlorophenyl laurate**. (See *Lauric acid*, pentachlorophenyl ester.)

**Pentaerythritol tetranitrate**, identn., in pharm. prep., by TLC, 1534.

**2,4-Pentanedione**. (See *Acetylacetone*.)

**2-Pentanone, 4-methyl-**. (See *Isobutyl methyl ketone*.)

**Pentoses**, deoxy-, detmn., spectroph., improved cysteine -  $\text{H}_2\text{SO}_4$  reagent for, 2663.

reaction product with conc.  $\text{H}_2\text{SO}_4$ , detmn., u.v. spectroph., 302.

**Peptides**. (See also *Glycopeptides*.)

fractionation, ion-exchange chrom. - spectroph., automated, 2082.

identn., electroph. - paper chrom., 327.

sepn., by electrochromatography, on cellulose, 875.

by TLC of dansyl deriv., 868.

**Peroxide**, detmn., in molten salts, voltamm., 115.

org. detmn., in presence of  $\text{H}_2\text{O}_2$ , 2509.

**Peroxodisulphate**, detmn., polarogr., 1847.

potentiom., use of  $\text{Hg}^{\text{I}}$  in presence of photosensitisers in, 1845.

**Peroxyphthalic acid**, di-*t*-butyl ester, detmn. of *t*-butyl hydroperoxide in, by TLC, 714.

- Perparin**, differentiation from papaverine hydrochloride and detmn., non-aq. volum., 3195.
- Per-rhenate**, detmn., amperom., 3014.  
identn., by TLC, 555.
- Perylenetetracarboxylic acid**, 3,4:9,10-dianhydride, detmn., in pigments, spectrofluorim., 772.
- Pesticides**, analysis, 1967 annual review, 1734.  
development and standardisation of methods of, report of I.U.P.A.C. commission on, 386.  
of terminal residues in crops, milk and tissues, report of I.U.P.A.C. commission on, 387.  
detmn., by GLC, 2216.  
in foods and feeding-stuffs, by A.O.A.C. method, collaborative studies of, 1555.  
in foods, crops and soil, GLC - microwave spectrum., 1563.  
in plants, by GLC, microwave-excited emission detector for, 388.
- identn., in fruit and vegetables, column - thin-layer chrom., 1556.
- methylenedioxyphenyl deriv., chromatography of, 2850C.
- organochlorine, detmn., in foods, by extractive distillation and GLC, 956.  
in vegetable oils, by extractive distillation and GLC, 1561.  
in soil, semi-quant., by TLC and u.v. irradiation, automated, 2745.  
in wildlife, by GLC, 404.  
evaluation of Florisil PR as clean-up agent for, 1557.  
extraction from milk, comparison of procedures for, 390.  
sepn., by temp.-programmed GLC, with dual electron-capture detection, 389.
- structural analysis of, by GLC with electron-capture detection, 996.
- organophosphorus, detection, on thin-layer chromatograms, by u.v. fluorescence, 405.  
enzymic, 2219.  
detmn., in boiled vegetables, by GLC, 2721.  
in citrus oils, by GLC, 1560.  
in milk and silage, by temp.-programmed GLC, comparison of columns for, 1589.  
in plants, by TLC - ring colorim., 3269.  
in urine, by GLC, thermionic detector for, 2608.  
of hydrolysis rates of, by GLC, 1588.  
of irradiation products of, by TLC and GLC, 2218.  
identn., paper or thin-layer chrom., 961.  
sepn., by GLC, column for, 2793.  
comparison of carbon adsorbents for use in clean-up columns, 1558.
- Petrol**, detmn. of 'existent' gum in, B.S.I. method for, 2554.  
of Pb in, gravim., B.S.I. method for, 2552.  
of light components of, by GLC, 2551.  
group-type analysis of, by GLC, 762.
- Petroleum**. (See also *Aviation fuel*.)  
analysis, applications of atomic-absorption spectrophotometry in, 757.  
of aromatic fractions of, by NMR, 763.  
of refinery gases from, by GLC, 1356.  
cracking process for, detmn. of unsatd. hydrocarbons in pyrolysis gas from, by GLC, 3090.  
crude, detmn. of trace elements in, by neutron activation, 759.  
detmn. of acids in, potentiom., 1366.  
of light components of, by GLC, 2551.  
of N in, by oxy-hydrogen combustion, 1364.  
spectroph., 3093.  
of org. F in, conductim., 761.  
of S in, B.S.I. lamp method for, 2553.
- Petroleum**, determination—*continued*  
- of V in, spectroph., 1365.  
evaluation of, column chrom., 2556.  
fractionation of, by gradient-elution chromatography, 1360.  
group-type analysis of, mass spectrom., 1357.  
high-boiling fractions of, identn. of S compounds in, 1361.  
mass spectrometry of, 2849C.  
naphtha and reformates, detmn. of C<sub>3</sub> to C<sub>8</sub> hydrocarbons in, by GLC, 1359.  
sepn. of sulphoxides from, ion-exchange chrom., 1362.
- Petroleum products**, detmn. of distillation-range of, B.S.I. method for, 2549.  
of S in, iodim., elimination of interferences in, 259.  
volum., 260.
- pH**, detmn., electrodes for, use of glass system Li<sub>2</sub>O - BaO - (Pr,Nd)<sub>2</sub>O<sub>3</sub> - SiO<sub>2</sub> in, 1687.  
in tetrahydrofuran medium, 1093.  
meter for, transistorised, 2841.  
universal scale for different temp. and solvents, 1685.  
for methanol and aq. methanol solvents, 1686.
- Pharmaceutical analysis**, applications of internal reflectance spectrophotometry in, 1487.  
of TLC in, 916.  
assay of biol. availability of drugs in formulations, 1466.  
automated, programmed controller for, 427.  
progress report on, 1485.  
report of conference on, 1C.  
review of pharmacopoeial standards and specifications used in, 2125.
- Phaseolus radiatus**, detmn., of ethanolamine in, as 2,4-dinitrophenyl deriv., ion-exchange paper chrom. - spectroph., 3160.
- Phenacetin**, detmn., by hydrolysis and oxidation with Br, 3085.  
in urine, in presence of its metabolites, by GLC or TLC, 3135.
- Phenaglycodol**, detmn., in biol. materials, by solvent extraction - u.v. spectroph., 3136.
- Phenatine**, identn., tests for, 297.
- Phenazone**, detmn., spectroph., 358.  
volum., 1515.  
identn., by TLC, 3218.
- Phenethylamine**, 3,4-dimethoxy-, identn., by TLC and mass spectrometry, 319.
- Phenetidine**, detmn., by oxidation with Br, 3085.
- Pheniodol**, detection, on paper or thin-layer chromatograms, spray reagent for, 2158.
- Phenmetrazine**, identn., in urine, by solvent extraction - paper chrom., 3137.
- Phenobarbitone**, detmn., in blood, in presence of primidone, by GLC, 2603.  
in blood serum, in presence of interfering drugs, thin-layer chrom. - spectroph., 811.  
in presence of ergotamine tartrate and belladonna alkaloids, argentim., 3215.  
sepn. from atropine, hyoscyamine, hyosine and ergotamine, in tablets, by TLC and column chromatography on silica gel, 1493.
- Phenol**, detmn. of ketones in, spectroph., 1937.  
potentiom., 239.
- , **4-acetamido-**, detmn., in urine, by GLC, 2013.
- , **3-amino-**, detmn., in oral soln., in presence of Na 4-aminosalicylate, spectroph., 938.
- , **2-t-butyl-4-methoxy-**, detection, in fats, by TLC, spray reagent for, 1553.  
detmn., in vegetable oils, column chrom. - spectroph., 1554.  
semi-quant., ring colorim., 955.



- Phenol, 2,4-dichloro-**, detmn. of products in production of, by GLC, 1347.
- , **2,4-dinitro-6-phenyl-**, detmn., in mixtures of phenolic pesticides, by GLC, 2220.
- , **4,4-isopropylidenedi-**, detmn., in mixtures with diphenyl carbonate, gel-permeation chrom., 2570.
- t-octylated, detmn. of isobutene tetramers in, volum., 1386.
- , **4-methoxy-**, detmn., in mixtures with quinol, volum., 241.
- , **4,4'-methylenedi-**, detmn., on paper and thin-layer chromatograms, photom., 2580.
- , **pentachloro-**, detmn., in urine, turbidim., 2022.
- spectroph., 240.
- sepn. from dieldrin, in wood preservative, ion-exchange chrom., 1585.
- , **2-phenyl-**, detection and semi-quant. detmn., on citrus fruits, by solvent extraction - TLC, 385.
- detmn., in citrus peel, gas chrom. - spectroph., 1561.
- in presence of biphenyl and diphenylamine, by TLC, GLC and spectrofluorimetry, 2188.
- Phenolic acids**, sepn. of biologically important compounds, by TLC on cellulose, 3143.
- Phenols**, *p*-alkyl-, analysis, by TLC, 2557.
- detection, by GLC, after chloroacetylation, 1936.
- in industrial wastes, by GLC, 2767.
- spectroph., suppression of interference by  $S^{2-}$ , 421.
- on TLC plates, fluorim., 1431.
- potentiom., 1345, 1938.
- spectroph., after coupling with 4-amino-phenazone, 2533.
- dihydric, *o*-, detection, on chromatograms, 745.
- TLC of, 3078.
- disubstituted, paper chromatography of, 744.
- higher, sepn., by TLC, 2C.
- methyl ethers of, TLC of, 2C.
- nitro-, TLC of, 2C.
- paper chromatography of, after coupling with *p*-nitroaniline, 2532.
- sepn., by TLC, 1344.
- column chrom. and TLC, 3C.
- of biologically important compounds, by TLC on cellulose, 3143.
- solvent extraction of, from aq. soln., by butyl or isoamyl acetates, 743.
- Phenothiazine**, deriv. of, detmn., in tablets and injections, u.v. spectroph., 1519.
- identn., in urine, by TLC, 1416.
- mass spectrom., 2693.
- sepn., by TLC, 934.
- of 7-alkoxy-3-halo- and 3,7-dialkoxy-, by TLC, 252.
- detmn. of diphenylamine in, by GLC, 3231.
- Phenoxybenzamine**, detmn., in pharm. prep., by GLC, 1096C.
- Phentolamine**, detmn., in pharm. prep., by GLC of trimethylsilyl ether, 1520.
- Phenylbutazone**, identn., by TLC, 3218.
- o-Phenylenediamine**, detmn., coulom., 1348.
- Phenylephrine**, detmn., in blood serum and urine, by TLC - fluorim., 2017.
- hydrochloride, detmn., in pharm. prep., in presence of antihistamines or antipyretics, column chrom. - spectroph., 3223.
- Phenylthiohydantoins**, identn., on TLC plates, by i.r. spectra, 2645.
- Phenylramidol**, detmn., in pharm. tablets, non-aq. volum., 2152.
- Phenytol**, detmn., in presence or absence of barbiturates, complexom., 928.
- Pheophorbides**, complexes with Zn or Cu, detmn., in processed foods, column chrom. - spectroph., 2726.
- Pheophytins**, complexes with Zn or Cu, detmn., in processed foods, column chrom. - spectroph., 2726.
- detmn., in vegetable oils, column chrom. - spectroph., 980.
- Phorate**, detmn. in plants, in presence of its O analogue sulphone, column chrom. - colorim., 2750.
- Phosphagens**, chromatography of, review, 854.
- identn., by TLC, 2066.
- Phosphate**, detmn., amperom., 2968.
- as molybdophosphate, use of i.r. drying of ppt. in, 629.
- in biol. materials, by GLC of trimethylsilyl deriv. of, 805.
- colorim., automated, 806.
- in pharm. prep., in presence of  $AlPO_4$ , volum., 3241.
- non-aq. potentiom., 1835.
- inorg., detmn., in blood serum, photom., 1407.
- in presence of adenosine triphosphate, spectroph., 2004.
- Phosphate rocks**. (See under *Minerals, ores and rocks*.)
- Phosphatidylcholine**, identn., i.r. spectroph., 2047.
- Phosphatidylethanolamines**, identn., i.r. spectroph., 2047.
- Phosphine**, detmn., in air, detector tube for, 1594.
- in foods, by oxidation with Br and spectroph. detmn. of  $PO_4^{3-}$ , 2722.
- in mixtures with  $SiH_4$ ,  $GeH_4$ ,  $AsH_3$ ,  $H_2S$  and  $H_2$  gas chrom., 613.
- Phosphine oxides**, GLC of, 737.
- Phosphinic acid, chloromethyl-**, sepn. of mixtures with methylphosphonic acid,  $PO_4^{3-}$  and  $PO_3^{3-}$ , paper chrom., 234.
- Phosphite**, detmn., in presence of  $H_3PO_3$ , potentiom., 101.
- Phosphoinositides**, poly-, extraction from rat brain and detmn. of total P by molybdenum blue method, 310.
- Phospholipids**, detmn. of diols and triols in, by GLC, acetylation process for, 2041.
- hair, analysis, by TLC and GLC, 837.
- nitrogenous, identn., i.r. spectroph., 2047.
- Phosphonic acids**, detection, on thin-layer chromatograms, 1340.
- Phosphoric acid**, detmn. of metals in, spectrogr., 2970.
- esters of, analysis, paper chrom., 3059.
- Phosphorodithioic acid**, *OO*-diethyl ester, Ni salt, detmn., potentiom., 2526.
- OO*-dimethyl ester, detmn. of *OO*S-trimethyl phosphorodithioate in, volum., 738.
- Phosphorothioic acid**, alkyl esters, TLC of, 1339.
- OO*-dimethyl S-(methylcarbamoyl)methyl ester, sepn. from vamidithion S-oxide and from menazon, paper chrom., 961.
- Phosphorus**, detmn., spectrogr., in cool flames, 2427.
- gravim., 1206.
- in biol. materials, flame spectroph., 288.
- in biol. tissues, enzymic - spectrofluorim., 289.
- in blood serum, simul. with Ca, atomic absorption spectroph., automated, 1995.
- photom., automated, 1994.
- in industrial wastes, photom. or wet-combustion methods for, 1607.
- in minerals, ores or rocks, by neutron activation, 1207.

**Phosphorus, determination—continued**

- in org. compounds, spectroph., comparison of mineralisation methods for, 1307.
- in presence of As, by solvent extraction gravim., 628.
- of Si, 2411.
- simult. with Si, atomic-absorption and u.v. spectroph., 2428.
- spectroph., as molybdophosphate, use of solvent extraction in, 1833.
- measurement of  $^{32}\text{P}$  activity without scintillator, 1712.

**Phosphorus, organic compounds, of, detection, on paper chromatograms, colour reactions for, 1409.**

- error in, 1408.
- detmn. of S in, volum., indicator for, 739.

**Phosphorus, oxo-acids of, detmn., potentiom., in org. solvents, 1208.****Photometry, cells for measuring flowing liquids, 1088, 2301P, 2302P.**

- sources for He-glow discharge, 283.
- radio-isotopic, 2299.

**Photometry, atomic-emission, measurement of flow-rate and pressure of gases in, 3325.**

- selection of gases for, 3324.
- three-channel, for soil analysis, 1659.
- use of electronic integration and automatic background correction in, 2297.

**Photons, source of, H or  $^3\text{H}$  flash lamps as, 2285.****Phthalic acid, detmn., in presence of *o*-toluic acid, spectroph., 243.**

- K H salt, detmn., coulom., 10.

**Phthalic anhydride, detmn. of impurities in, by GLC, 1973.****—, tetrahydro-, analysis of mixtures with maleic anhydride, thermogravim., 728.****Phylloquinone. (See Vitamin K<sub>1</sub>.)****Phyostigmine, detmn., in biol. tissues, fluorim., 810.****Pickles, detmn. of polysorbate 80 in, gravim. - i.r. spectrogr., 1549.****Picolinic acid, sepn. from nicotinic and quinolinic acids, by TLC, spray reagents for, 318.****Picryl chloride. (See Benzene, 2-chloro-1,3,5-trinitro-.)****Pigments, inorg., detmn., i.r. spectroph., 784.**

- detmn. of Ca and P in  $\text{TiO}_2$ -based, mass spectrom., 1672.

- org., detmn. of perylenetetracarboxylic 3,4:9,10-dianhydride in, spectrofluorim., 772.

- plant, identn., in algae, chrom., 1466.

- ion-exchange paper chrom. - spectroph., 2090.

- sepn., by TLC, 1464, 1465.

- red lakes, identn. of natural and synthetic, on wool, by TLC of hydroxyquinones in, 771.

**Pimento oil, detmn. of eugenol in, spectroph., 1958.****Pine tissues, detmn. of oleoresin in, by GLC, solid sampler for, 2610.*****Pinus sylvestris*, detection of growth-regulating substance in, spectroph., 793.****Piperylon, detmn., in pharm. prep., in presence of dipyrone, column chrom. - spectroph., 3217.****Plants. (See also Biological materials; Biological tissues; Vegetables.)**

- detmn. of amino-acids in hydrolysates of, interference by humins in, 1469.

- of amino-N in, sealed-tube digestion method for, 2594.

- of essential elements in, automated, 796.

- of ethanolamine in, as 2,4-dinitrophenyl deriv., ion-exchange paper chrom. - spectroph., 3160.

**Plants, determination—continued**

- of Mn, Fe and Zn in, X-ray spectrogr., volume-reduction technique for, 2599.
- of sol. carbohydrates in seeds of tropical pasture species, paper chrom., 2214.
- of trace elements in, comparison of methods for, 1988.
- of trace metals in, polarogr., review, 1990.

**Plasticisers, sepn. and identn., by TLC - i.r. spectroph., 2581.****Plastics, detmn. of F in, gravim., 3122.**

- of toxic substances in, comparison of official methods for, 1599.

- identn. of antioxidants and u.v. stabilisers in products used for food packaging, by TLC, 2705.

**Plastoquinones, TLC of, 3C.****Platinum. (See also Platinum-group metals.)**

- detmn., by solvent extraction - photom., 3040.

- in minerals, ores or rocks, by fire assay - spectrogr., 1886.

- spectroph., 191.

- spectroph., 175.

- sepn. from other metals, on  $\text{Sn}^{\text{IV}}$  phosphate and tungstate papers, 1112.

**Platinum, reagents for, 1,4-diphenylthiosemicarbazide, 3040.**

- tris-1,10-phenanthroline -  $\text{Fe}^{\text{II}}$ , 175.

**Platinum-group metals, detmn., in minerals, ores or rocks, 1286.**

- spectrogr., 3041.

- sepn., by TLC, 168.

- review of methods of, 29.

**Plutonium, analysis, review, 84.**

- detmn., by solvent extraction - photom., as complexes with benzenearsonic acid deriv., 85.

- in plutonium metal, by difference spectro-photometry, 2939.

- in urine, by surface adsorption and ion exchange, 2000.

- of Fe in, by solvent extraction - photom., 86.

- of  $^{239}\text{Pu}$ , by liquid scintillation counting, interferences in, 2410.

- ion-exchange paper chrom. and scintillation counting, 2938.

**Plutonium sulphide, detmn. of S in, amperom., 1814.****Polarimetry, photo-electric apparatus for, 1682.**

- use of spectrophotometer for, 1681.

**Polarography. (See also Electrodes.)**

- a.c. attachment to d.c. instrument for, 497.

- effect of temp. on, 2319.

- instrument for, with phase-selective detection, 1690.

- 1967 annual review, 1734.

- applications of Kalousek technique in, 496.

- basal electrolytes for, use of alkaline mannitol soln. as, 498.

- behaviour of inorg. species in dimethylformamide, 1747.

- comparative, technique of, 495.

- controlled-potential differential d.c. study of errors in, 1689.

- effect of static magnetic field on, 2318.

- flow-through cell for simult. polarogr., coulom. and spectroph. measurements, 1691.

- of flowing streams, Hg-coated tubular platinum electrode for, 499.

- review, 3341.

- stationary-electrode, effect of adsorption at electrode - soln. interface on, 500.

- theoretical discussion of, 494.

**Polishing materials, optical, i.r. spectra of, 2809.**

- Polonium**, detmn., coulomb., 1853.  
sepn. from Te, paper chrom., 2998.  
solvent extraction of  $\text{Po}^{\text{II}}$  and  $\text{Po}^{\text{IV}}$ , from HCl soln., 647.
- Polybutene**, detmn., on orange peel, by pyrolysis - GLC, 2723.
- Polycaprolactam**, detmn. of caprolactam and oligomers in, 1971.  
of  $\text{H}_2\text{O}$  in, by Karl Fischer method, 1384.  
extract of, detmn., interferom., 1383.
- Polycarboxylic acids**. (See under *Carboxylic acids*.)
- Polyesters**, alkanediol - alkanol - dicarboxylic acid, sepn., by TLC, 780.
- Polyethylene**, detmn. of Al, Cl, Fe and Ti in, X-ray spectrogr., 1385.  
of 2,6-di-*t*-butyl-*p*-cresol in, by GLC, 270.
- Poly(ethylene oxide)**, detmn., 208.
- Poly(ethylene terephthalate)**, detmn. of diethylene glycol in, by GLC, 1972.  
of hydroxyl groups in, by reaction with 3,5-dinitrobenzoyl chloride, 273.  
with *o*-sulphobenzoic acid anhydride, 1388.
- Polyglycerols**, TLC of, 219.
- Polymers**, acrylonitrile - styrene, detmn. of acrylonitrile and styrene in volatile constituents of, polarogr., 271.  
acrylonitrile trimer, detmn. of  $\text{Fe}^{\text{III}}$  acetyl-acetate in, spectroph., 2572.  
concn. of soln. of, method for, 3121.  
detmn. of C and H in, 697.  
of epoxy-groups in, spectroph., 3109.  
of hydroperoxides in, diagnostic agents for, 2587P.  
of vinyl monomers in, polarogr., 2573.  
for fibres, detmn. of S in, 3108.  
fractionation of, column chrom., belt detector for, 2778.  
on glass support, 2568.  
vessel for sepn. of viscous sediments in, 2244.  
identn., by light-scattering photometry, selection of solvents for, 3107.  
measurement of mol. wt. of, by ultracentrifuge, 775.  
study of, by pyrolysis - GLC, 776.  
review, 2567.  
test for thermo-oxidative stability of, 2494.
- Polymyxin B**, identn., in presence of colistin, by TLC, 922.
- Polynitro-compounds**, aromatic, detection, 278.
- Polyoxyethylene glycols**, fractionation of, by GLC and TLC, 3C.
- Polyposphates**, sepn., thin-layer electroph., 9269.
- Poly(propane-1,2-diol)**, detmn., 208.
- Polypropene**, detmn. of Cl in, 777.
- Poly(propylene oxide)**, detmn., 208.
- Polysaccharides**, radioactive, sepn. and detmn., in biol. materials, electroph. - liquid scintillation counting, 307.
- Polysiloxanes**, methylphenyl-, detmn., by GLC, 1387.
- Polysorbate 80**, detmn., in pickles, gravim. - i.r. spectrogr., 1549.
- Poly(vinyl acetate)**, detmn. of vinyl acetate in aq. dispersion of, coulomb., 3110.
- Poly(vinyl chloride)**, detmn. of Cl in, X-ray spectrogr., 1969.  
moulding powders of, detection of lubricants in, by TLC, 1970.  
toxicity of thermal-decomposition products of, 1109.
- Poly(vinylpyrrolidone)**, detmn., in pharm. prep., colorim., 3238.
- Porosity**, equation for pore vol. and surface area distributions, 528.  
measurement of, by X-ray scattering, 1730.
- Porphyrins**, detmn., in erythrocytes, by solvent extraction - spectroph., 2093.  
in urine, by solvent extraction - spectroph., 2092.  
sepn. from erythrocytes, by solvent extraction, 889.  
of free, by TLC on talc, 2091.
- Porphyroxine**, isolation from opium and purification of, 2130.
- Potassium**, detmn., by solvent extraction - spectroph., 43.  
in biol. tissues, flame photom., 284.  
in fertilisers, atomic-absorption spectroph., 2207.  
u.v. absorption, automated, 2208.  
in minerals, ores or rocks, atomic-absorption spectroph., 564.  
comparison of methods for, 563.  
X-ray spectrogr., 1138.  
in pharm. prep., turbidim., seeding reagent for, 1489.  
in pharm. soln., potentiom., 363.  
with Na tetraphenylborate, by two-phase titration, 1137.  
sepn. from Li and Na, ion-exchange chrom., 2353.
- Potassium chloride**, detmn. of purity of, for electrochemical use, 565.
- Potassium guaiacolsulphonate**, detmn., in cough syrups, colorim., 3237.
- Potassium salts**, detmn., in pharm. prep., gravim. or volum., 1531.
- Potatoes**, detmn. of propham or chlorpropham in, column - thin-layer chrom., 1586.
- Powders**, detmn. of specific surface of, by N absorption, B.S.I. method for, 3378.  
device for mixing, 2769.
- Pralidoxime**, detmn., in mixtures with other pyridine deriv., ion-exchange chrom. - u.v. spectroph., 1530.
- Praseodymium**, detmn., in presence of other elements and  $\text{HNO}_3$ , photom., 599.
- Praseodymium(IV) oxide**, detmn., amperom., 1806.
- Prazepam**, detmn., in presence of 5-chloro-2-(cyclopropylmethylamino)benzophenone, spectroph., 2149.
- Precipitation**, by photochemical action, study of, 1107.
- Pregnanediol**, detmn., in blood plasma, by TLC and GLC of the heptafluorobutyrate deriv., 1445.  
in urine, comparison of methods for, 847.  
simult. with pregnanolone, enzymic - gas chrom., 2057.
- 5 $\beta$ -Pregnane-3 $\alpha$ ,11 $\beta$ ,17,20 $\alpha$ ,21-pentol**, sepn. from related compounds in urine, by sequential solvent extraction, 311.
- Pregnanolone**. (See *5 $\beta$ -Pregnan-20-one*, *3 $\alpha$ -hydroxy-*.)
- 5 $\beta$ -Pregnan-11-one**, *3 $\alpha$ ,17,20 $\alpha$ ,21-tetrahydroxy-*, sepn. from related compounds in urine, by sequential solvent extraction, 311.
- 5 $\beta$ -Pregnan-20-one**, *3 $\alpha$ -hydroxy-*, detmn., in urine, simult. with pregnanediol, enzymic - gas chrom., 2057.
- Pregn-4-ene-3,20-dione**, *6 $\beta$ ,11 $\beta$ ,17 $\alpha$ ,21-tetrahydroxy-*, sepn. from related compounds in urine, by sequential solvent extraction, 311.
- Pregn-5-ene-3 $\beta$ ,17 $\alpha$ ,20 $\alpha$ -triol**, detmn., in urine, by GLC as trimethylsilyl ether, 3151.
- Pregn-4-en-3-one**, *20 $\alpha$ -hydroxy-*, detmn., in biol. tissues and blood plasma, by double-isotope deriv. formation, 2053.



- Preservatives**, detmn., in foods, review, 382.  
identn., in foods, by TLC, 1552.
- Prilocaine**, hydrochloride, detmn., in injection soln., non-aq. volum., 2151.  
qual. and quant. tests for, 2151.
- Primidone**, detmn., in blood, in presence of phenobarbitone, by GLC, 2603.
- Procainamide**, detmn., in presence of 4-aminobenzoic acid, volum., 3221.
- Procydiline**, detmn., in pharm. tablets, non-aq. volum., 2152.
- Progesterone**, detmn., in biol. tissues and blood plasma, by double-isotope deriv. formation, 2053.  
in mixtures with oestradiol benzoate and testosterone propionate, by TLC, 2140.  
in oral contraceptives, thin-layer chrom. - i.r. spectroph., 2141.  
metabolites of, sepn., in urine, by GLC, comparison of methods of hydrolysis for, 839.
- Proline**, detmn., in air, paper or thin-layer chrom. - spectroph., 413.
- , **hydroxy-**, detection, in protein fractions extracted from broad-bean leaves, 876.  
detmn., in blood plasma and urine, ion-exchange chrom. - spectroph., 870.  
in urine, spectroph., 324.
- Prometon**, detmn., in potable water, by TLC, 994.  
thin-layer chrom., spray reagent for, 406.
- Prometryn**, detmn., in potable water, by TLC, 994.  
thin-layer chrom., spray reagent for, 406.
- Propane**, oxidation products of, analysis, by GLC, 711.  
sepn. from propene, on mol. sieves, 2504.
- , **1,2-dibromo-3-chloro-**, detmn., in soil, by GLC on Porapak Q column, 2749.
- Propane-1,2-diol**, detmn., in cosmetics, by GLC, 1374.  
of butane-2,3-diol in, by GLC, 2512.  
dinitrate, detmn., by GLC, 411.
- Propane-1,3-diol**, detmn., in lipids and phospholipids, by GLC as the diacetate, 2041.
- Propantheline**, bromide, detmn., in pharm. tablets, spectroph., 2696.
- Propazine**, detmn., in potable water, by TLC, 994.  
thin-layer chrom., spray reagent for, 406.
- Propellents**, detmn. of graphite in, conductim., 1401.
- Propene**, detmn. of COS in, by GLC, 215.
- Propham**, detmn., in potatoes, column - thin-layer chrom., 1586.
- Propineb**, detmn. in plants, spectroph. or polarogr., 2724.
- Propionic acid**, detmn., in food, by GLC, 2185.
- , **3,3'-thiodi-**, dilauryl ester, detmn., in lard, by temp.-programmed GLC - spectroph., 2189.
- Propylene carbonate**. (See *1,3-Dioxolan-2-one, 4-methyl-*.)
- Proserine**, detmn., in autopsy material, paper chrom. - spectroph., 3162.
- Protactinium**, detmn. of  $^{233}\text{Pa}$ , by solvent extraction with 2,6-dimethylheptan-4-ol and isobutyl methyl ketone, 83.  
sepn. of  $\text{Pa}^{\text{IV}}$  and  $\text{Pa}^{\text{V}}$ , by co-pptn. with  $\text{ThF}_4$ , 1810.
- Protamines**, hydrolysates of, error in amino-acid analysis of proteins due to presence of O-sulphates in, 1456.
- Proteins**, blood serum, sepn., column chrom. - spectroph., automatic apparatus for, 1461.  
thin-layer electrophoresis of, medium for, 1462P.  
brain, detection, micro-disc electroph., 2650.  
sepn., disc electroph., on Sephadex gel, 3176.
- Proteins—continued**  
concn. of soln. of, electroph., dialysing apparatus for, 2086.  
detmn., in aq. soln., in  $\mu\text{g}$  amounts, i.r. spectroph., 879.  
in biol. samples applied to agar thin layers, densitom., 878.  
in duodenal fluids, paper electroph. - colorim., 2084.  
in faeces, by Kjeldahl method, 329.  
in mast cells, comparison of methods for, 328.  
in presence of nucleic acids, spectroph., 2651.  
fractionation of, membrane-partition chrom., ultrafiltration cell for, 877.  
glyco-, detection, zone electroph., pre-staining of strips with  $\text{HIO}_4$  for, 887.  
detmn. of galactose:mannose molar ratio in, ion-exchange - thin-layer chrom., 1460.  
hydrolysates, detmn. of amino-acids in, by GLC, 2649.  
electroph., error in, 1456.  
of tryptophan in, spectroph., 323.  
milk, sepn., electroph., 1543.  
starch-gel electroph., 1544.  
plant, extractability in phenol - acetic acid - water, study of, 876.  
sepn., paper- and thin-layer chrom., 3177.  
 $^3\text{H}$ -labelled, gel electroph. - spectroph. - radiom., 2083.
- Prunus mume**, detmn. of org. acids in, paper chrom. - spectroph., 2126.
- Pseudocumene**. (See *Benzene, 1,2,4-trimethyl-*.)
- Psychotomimetic drugs**, analysis, 1C.  
identn., by TLC, 1517.  
mass spectrom., 1C.  
sepn., by GLC, 1096C.  
TLC of, 1494.
- Pteridin**, deriv. of, concn. in insect-cell extracts, ion-exchange chrom., 1470.
- Purine**, deriv. of, detection, by ion-exchange TLC and phosphorescence at  $-196^\circ$ , 1476.  
detmn., in soln., conductim., 3181.  
structural analysis, ion-exchange chrom., relation between elution vol. and ring substituents, 3182.
- Pyranosides**, detmn. of  $\beta$ -D-methylarabino- and  $\alpha$ -D-methylgluco-, by  $\text{IO}_4^-$  oxidation, 1319.
- Pyrazinamide**, identn., by TLC, 1522.
- Pyrazon**, detmn., in presence of related compounds, by TLC and polarography, 995.  
in technical products, column or thin-layer chrom. - spectroph., 1582.  
containing its isomer, argentim., 3267.
- Pyrethrum**, detmn. of hydroxycyclopentenone in, column chrom. - volum., 1000.  
of pyrethrins in, column chrom. - volum., 1000.
- Pyridine**, deriv. of, detmn., by GLC, without tailing effects, 3096.  
purification of, for use in voltammetry, 1094.  
sepn. from picolines and 2,6-lutidine, by GLC, 1945.
- , **amino-**, isomers of,  $R_M$  values in TLC of, 748.
- Pyridinecarboxylic acid**, sepn. from pyridine-dicarboxylic acids, by ion-exchange TLC, 1354.
- Pyridine-2,6-dicarboxylic acid**, detmn., in bacterial spores, colorim., reagent for, 2070.
- 9H-Pyrido[3,4-b]indole**, deriv. of, paper and thin-layer chromatography of, 1355.
- Pyridoxal**, detmn., in biol. fluids and foods, paper chrom., 2009.  
in pharm. prep. containing related compounds, by GLC of acetyl deriv., 1510.

- Pyridoxamine**, detmn., in biol. fluids and foods, paper chrom., 2009.  
in pharm. prep. containing related compounds, by GLC of acetyl deriv., 1510.
- Pyridoxine** (*vitamin B<sub>6</sub> group*), analysis, mass spectrom., 3186.  
detmn., in biol. fluids and foods, paper chrom., 2009.  
in dragées, simult. with thiamine, in presence of ascorbic acid, rutin and procaine, paper chrom. - spectroph., 3212.  
in feeding-stuffs, microbiol., 1581.  
sepn. of constituents of, by GLC of acetyl deriv., 1510.
- Pyridoxol**, detmn., colorim., 1479.  
in biol. fluids and foods, paper chrom., 2009.  
in pharm. prep., by GLC of acetyl deriv., 1510.  
identn., by TLC, 1509.
- Pyrite**, detmn. of Au and Ag in, atomic-absorption spectroph., 152.
- Pyrocarboxylic acid**. (See *Formic acid, oxydi.*)
- Pyrolysis**, study of, in controlled atmosphere, apparatus for metering of gas-flow in, 525.
- Pyrolysis gas**. (See under *Petroleum.*)
- Pyrrrole**, alkyl deriv. of, GLC of, 753.
- Pyruvamide**, sepn. of 2,6-dinitrophenylhydrazones of, column chrom., 1337.
- Pyruvic acid**, detmn., in blood, enzymic - fluorim., automated, 2615.
- , *p*-hydroxyphenyl-, detmn., in urine, in presence of related phenolic acids, colorim., 2620.

## Q

- Qualitative analysis**, of inorg. substances insol. in acids, 540.
- Quartz**, detmn. of Fe in, spectrogr., 612.
- Quaterphenyl**, *o,m*-, TLC of, on carbon black, 2541.
- Quinazolin-4-one**, 3-(2-ethylphenyl)-2-methyl-, detmn., in pharm. tablets, polarogr., 927.
- Quinol**, detmn., in mixtures with 4-methoxyphenol, volum., 241.  
radion., with neutron-activated Ag as reagent, 2332.
- Quinoline**, sepn. from isoquinoline, by TLC, 3089.
- , 8-mercapto-, detmn., polarogr., 2546.
- Quinolinic acid**, sepn. from picolinic and nicotinic acids, by TLC, spray reagents for, 318.

## R

- RDX**. (See 1,3,5-Triazine, hexahydro-1,3,5-trinitro-.)
- RNA**. (See *Nucleic acid, ribo.*)
- Radiations**, semiconductor detectors for, 3347.  
detection, materials for personal dosimetry, 509.  
dosimeter for, 511.  
gamma-, calibration of dosimeters for, 510.  
measurement of, ionisation-chamber technique for, 3346.
- Radioactivation analysis**, by gamma-rays, review, 515.  
technique of, 1708.  
by <sup>3</sup>He, theory of, 1711.  
or <sup>3</sup>H, recoil technique for, 1709.  
by neutrons, applications in pharm. analysis, 2677.  
detmn. of activity levels produced in thermal- and fission-neutron irradiation, 3358.  
evaluation of maximum sensitivity of, in presence of interfering activities, 517.  
measurement of gamma peak areas in, 3360.  
qual., spectrum-stripping technique for mono-energetic gamma spectra, 3361.

- Radioactivation analysis** by neutrons—*continued*  
review, 516.  
rotating sample holder for, 1707.  
sepn. of elements in, by use of MnO<sub>2</sub>, 512.  
counting errors in, application of statistics to, 1713.
- Radioactive tracers**, detection, in biol. systems, scintillomicroscope for, 3362.
- Radiometric analysis**. (See also *Radioactivation analysis.*)  
1967 annual review, 1734.  
by isotope dilution, apparatus for study of reactions in stationary droplets, 508.  
errors in, 1706.  
inorg., review, 1705.  
substoichiometric sepn. in, 2870.
- Radon**, detmn. of <sup>220</sup>Rn in soil-gas, 2346.
- Raffinose**, detmn., by IO<sub>4</sub><sup>-</sup> oxidation, 1319.
- Rain-water**. (See under *Water, natural.*)
- Rapeseed**, analysis of thioglucosides of, enzymic - gas chrom., 398.  
detmn. of isothiocyanates and oxazolidine-2-thiones in, by solvent extraction - spectroph., 989.  
of S compounds in, review, 2213.
- Rapeseed oil**, detmn. of carotenoids and pheophytins in, column chrom. - spectroph., 980.
- Rare-earth metals**. (See also *Lanthanides.*)  
analysis, spectrogr., sensitivity of, 2922.  
Ce-group, analysis, X-ray spectrogr., 2396.  
detmn., biamperom., 601.  
in minerals, ores or rocks, mass spectrom., 1175.  
in phosphate minerals, 102.  
in soln., spectrogr., 1173.  
of Dy, Eu, La and Sm in minerals, ores or rocks, by neutron activation, 2397.  
photom., 598.  
potentiom., 2398.  
spectroph., 1801.  
X-ray spectrogr., 80.  
gradient elution of, comparison of distribution coeff. with experimental values, 1802.  
log. distribution coeff. of compounds fractionally pptd. from soln., 1799.  
sepn., by ion exchange in presence of lactic acid, 2924.  
column chrom., with bifunctional phosphine oxides, 2925.  
of ternary mixtures of, by ion exchange, equation for, 2923.
- Rauwolfia**, detmn. of alkaloids in, 1C.
- Rauwolfia alkaloids**, identn., oscillopolarogr., 1501.
- Rauwolfia cumminsii**, sepn. of alkaloids of, by solvent extraction - TLC, 3201.
- Reactor materials**. (See *Nuclear reactor materials.*)
- Reagents**, 1967 annual review, 1734.  
dispensing of, as pellets, 423.
- Reagents, organic**. (Applications of the less-common organic reagents are included here. References to publications of which specific reagents are the subject are included under the names of the reagents elsewhere.)  
acetophenone oxime, 683.  
alizarin complexan, 1247.  
alloxantin, 1002.  
4-aminobenzoic acid, 1773.  
anthragallol (1,2,3-trihydroxyanthraquinone), 533.  
anthrapurpurin, 533, 606.  
antipyrene deriv., 65, 585.  
arsenazo I, 2433.  
arsenazo III, 598, 607, 1273, 1828, 1943.  
α-benzamido-2-chlorocinnamic acid, 246.

**Reagents, organic—continued**

benzenesulphonic acid, 1264.  
 benzil  $\alpha$ -monoxime, 1283.  
 benzoic acid, 35, 1748.  
 benzohydroxamic acid, 130.  
 benzoin, 2204.  
 benzoin  $\alpha$ -oxime, 110.  
 benzoseleno-2,1,3-diazole, 2481.  
 benzoylacetanilide, 94, 2903.  
 1-benzoyl-4-phenylthiosemicarbazide, 2478.  
 biacetyl monoxime, 852, 853, 2064, 2065.  
 2,2'-bichinchonic acid, 1144, 1161.  
 bis(4-dimethylaminophenyl)methane, 375.  
*NN*-bis(2-hydroxyethyl)alanine, 2327.  
 bismuthiol II (5-mercapto-3-phenyl-1,3,4-thiadiazole-2-thione), 2997.  
 bis(trimethylsilyl)acetamide, 1520, 2629.  
 bromocresol, 295.  
 3-bromo-4-(2-pyridylazo)-1-naphthol, 1887.  
 bromopyrogallol red, 2952.  
 cation 2B [1-(4-nitro-1-naphthyl)-3-(4-phenylazophenyl)triazene], 703.  
 caesium (sodium cyanotriphenylborate), 2879.  
*N*-carboxymethyl-*N*-(2-hydroxyethyl)alanine, 2327.  
 catechol violet, 1877, 2962.  
 2-chloro-5-cyano-3,6-dihydroxy-*p*-benzoquinone, 58.  
 4-(5-chloro-2-hydroxyphenylazo)resorcinol, 2916.  
 chlorophosphonazo III [3,6-bis(4-chloro-2-phosphonophenylazo)chromotropic acid], 2925.  
 chlorosulphophenol S [3,6-bis(5-chloro-2-hydroxy-3-sulphophenylazo)chromotropic acid], 2437.  
 chromotropic acid, 351.  
 cuprotest (6,7-dihydro-5,8-dimethylidibenzo-[b,j]1,10-phenanthroline), 1775.  
 cyanoformazan-2 [3-cyano-1,5-bis(2-hydroxy-5-sulphophenyl)formazan], 1757, 2964.  
 cycloheptane-1,2-dione dioxime, 2065.  
 cyclohexane-1,2-dione dioxime. (See *nioxime*.)  
 cyclopentylthiocarbamate, 122.  
 dalzin (1,6-diallyl-2,5-dithiobiurea), 2864.  
*o*-diacetylbenzene, 8, 361.  
 1,2-diaminocyclohexane-*NNN'*-tetra-acetic acid, (CDTA), 575, 649.  
*o*-dianisidine-*NNN'*-tetra-acetic acid, 589.  
 1,1-diantipyrinylethane, 155, 1178, 2480, 2994, 2997.  
 dibenzoyl tartaric anhydride, 247.  
 dibenzylthiocarbamic acid, Zn salt, 798.  
 5,7-dibromo-8-hydroxyquinoline, 141, 2926, 2933.  
 3,5-dichloro-*p*-benzoquinone chlorimine, 955, 1479.  
 dichloroindane-2,3-dione, 534.  
 diethylamino-[3-(1-methyl-2-piperidyl)-2-pyridylazo]phenol, 3031.  
 3,5-diethyl-2,6-dimercaptothiopyran-4-one, 2869.  
 diethylthiocarbamic acid, Ag salt, 2971.  
*NN*-diethyl-*p*-phenylenediamine 1525.  
 dihexyl phenylsulphonylphosphoramidate, 59.  
 dihydroxycoumaranone (6,7-dihydroxy-2*H*,3*H*-benzofuran-3-one), 614.  
 4,6-dihydroxy-5-nitrosocitinate, 142.  
 2',4'-dihydroxypropiophenone oxime, 143.  
 2,6-dimercaptothiopyran-4-thione, deriv. of, 619.  
 4-dimethylaminocinnamaldehyde, 358.  
 5-dimethylamino-2-(2-thiazolylazo)phenol, 3032.  
 6,7-dimethyl-2,3-di-2-pyridylquinoxaline, 2882.  
*NN*-dimethyl-*p*-phenylenediamine, 119, 1553.  
 2,4-dinitrobenzenediazonium fluoroborate, 1521.  
 3,6-dinitrophenolic acid, 1537.  
 diphenic acid, 2981.  
 1,4-diphenylbutadiene, 2550.

**Reagents, organic—continued**

diphenylcarbazide (diphenylcarbohydrazide), 650, 1949, 2439.  
 diphenyloctatetraene, 2550.  
 4,7-diphenyl-1,10-phenanthroline, 144, 160, 169.  
 4,7-diphenyl-1,10-phenanthroline disulphonic acid di-Na salt, 649, 808.  
 diphenylthiocarbazine, 1233.  
 1,4-diphenylthiosemicarbazide, 3040.  
 dipicrylamine, 3266.  
 di-2-pyridyl disulphide, 1458.  
 di-2-pyridyl ketoxime, 2482.  
 2,3-di-2-pyridylquinoxaline, deriv. of, 568.  
 di-8-quinolyl disulphide, 1143, 1162.  
 1,2-di(thiocarbamoyl)hydrazine (2,5-dithiobiurea), 2864.  
 dithiofluorescein, 2566.  
 dithiol (toluene-3,4-dithiol), 1842, 1856.  
 dithio-oxamide, 572.  
 5-ethylamino-2-(2-pyridylazo)-*p*-cresol, 106, 2984.  
 ethylenediamine-*NN'*-di(*o*-hydroxyphenylacetic acid), 2461.  
 [ $^{14}\text{C}$ ]-*N*-ethylmaleimide, 1539, 2596.  
 ferron (8-hydroxy-7-iodoquinoline-5-sulphonic acid), 1756.  
 1-fluoro-2,4-dinitrobenzene, 768.  
 formaldoxime, 788.  
 formazan I (see *cyanoformazan-2*.)  
 formazan deriv., 1101.  
 gallic acid, 668.  
 glyoxal bis(2-hydroxyanil), 800.  
*H*-acid (4-amino-5-hydroxynaphthalene-2,7-disulphonic acid), 3016.  
*N*-hexyldithiocarbamate, 122.  
 4-hydrizinobenzenesulphonic acid, 615, 1216.  
 4-hydroxycoumarin oxime, 678, 680.  
 2-hydroxyiminoacetanilide, deriv. of, 534.  
 hydroxyiminobenzotetronic acid (see 4-hydroxycoumarin oxime.)  
*o*-hydroxymercuribenzoic acid, 2566.  
 5-hydroxy-6-[3-(1-methyl-2-piperidyl)-2-pyridylazo]naphthalene-1-sulphonic acid, 3038.  
 2-(3-hydroxy-3-phenyltriazene)benzoic acid, 2958.  
 iminodi(thioacetic acid), 1878.  
 lithium aluminium dibutylamide, 235.  
 luminal (5-amino-2,3-dihydrophthalazine-1,4-dione), 3321.  
 lumogallion [5-chloro-3-(2,4-dihydroxyphenylazo)-2-hydroxybenzenesulphonic acid], 586, 1797, 2388.  
 2-mercaptobenzoic acid, 1259.  
 2-mercaptobenzothiazole, 1851.  
 8-mercaptoquinoline, 1162, 1163, 1165, 1220.  
 3-methoxy-2-nitrosophenol, 1014.  
 3-methylbenzothiazolin-2-one hydrazone, 1596, 2200.  
*S*-methylisothiuronium sulphate, 707, 3075.  
 3-methyl-4-octanoyl-1-phenylpyrazolin-5-one, 2901.  
 3-(1-methyl-2-piperidyl)-2-pyridylazonaphthalene-1,5-diol, 1142.  
 2-[3-(1-methyl-2-piperidyl)-2-pyridylazo]-1-naphthol, 1169, 2915.  
 4-[3-(1-methyl-2-piperidyl)-2-pyridylazo]-resorcinol, 1142.  
*N*-methylthiocarbamoyl-*N*-phenylhydroxylamine (see 1-hydroxy-3-methyl-1-phenyl-2-thiourea)  
 methylthymol blue, 1164, 2391.  
 monalzin [1-allyl(thiocarbamoyl)-2-thiocarbamoylhydrazine], 2864.  
 1,2-naphthaquinone-3-sulphonic acid, Na salt, 2081.  
 4-(1-naphthylazo)-1-naphthylamine, 2167.



**Reagents, organic—continued**

- nitchromazo [3,6-bis(4-nitro-2-sulphophenylazo)-chromotropic acid, Na salt, 2372.  
 nioxime (cyclohexane-1,2-dione dioxime), 851, 2065, 2979.  
 4-(6-nitrobenzyl)pyridine, 406.  
 3-nitrophthalic acid, 2960.  
 oxine blue, 550.  
 palladiaz [3,6-bis(4-arsenophenylazo)chromotropic acid], 1943.  
 phenazone, 1830.  
*N*-phenylantranilic acid, 852, 1232.  
*N*-phenylbenzohydroxamic acid, 2980.  
 phenylfluorone (2,6,7-trihydroxy-9-phenyl-3*H*-xanthen-3-one), 91, 114, 617.  
*N*-phenylfurohydroxamic acid, 1874.  
*N*-phenylsalicylohydroxamic acid, 623.  
 phthalaldehyde, 2072.  
 picolinaldehyde 2'-hydroxyanil, 1776.  
 picolinaldehyde 2-quinolylhydrazone, 2341.  
 picramine R [3-hydroxy-4-(2-hydroxy-3,5-di-nitrophenylazo)naphthalene-2,7-disulphonic acid], 1273.  
 2-pyrazoline-1-carbodithioic acid deriv., 1866.  
 2-(2-pyrimidylazo)-1-naphthol, 1738.  
 quinalizarin, 1807, 3035.  
 $\beta$ -resorcyllaldehyde thiosemicarbazone, 2379.  
 rhodizonic acid, 1100.  
 SPADNS [3-(4-sulphophenylazo)chromotropic acid], 692.  
 stilbazo [4,4'-bis(dihydroxyphenylazo)stilbene-2,2'-disulphonic acid], 586.  
 sulphobromophthalein, 328.  
 sulphonazo {bis[3-(8-amino-1-hydroxy-3,6-disulpho-2-naphthylazo)-4-hydroxyphenyl]-sulphone}, 2386.  
 tartaric anhydride dibenzoate, 247.  
 1,3,4,5-tetrahydroxycyclohexanecarboxylate, 602.  
*NNN'*-tetrakis(2-hydroxypropyl)ethylene-diammonium diperchlorate, 1206.  
 2-thenoyltrifluoroacetone [4,4,4-trifluoro-1-(2-thienyl)butane-1,3-dione], 174.  
 1-(2-thiazolylazo)-2-naphthol, 1888.  
 thiocaprolactam (hexahydro-2*H*-azepine-2-thione), 633.  
 thio-2-thenoyltrifluoroacetone [1,1,1-trifluoro-4-mercapto-4-(2-thienyl)but-3-en-2-one], 7.  
 thymolphthalexon, 90.  
 tiron (4,5-dihydroxybenzene-*m*-disulphonic acid), 1197, 1794.  
*N*-(*o*-tolyl)benzohydroxamic acid, 1102.  
 1,3,5,2,4,6-triazatriphosphorine hexakis-(*S*-thiosemicarbazide), 1780.  
 tribromopyrogallol, 2983.  
 2,3,4-trihydroxybenzenesulphonic acid, 2407.  
 2',3',4'-trihydroxychalcone, 1821.  
 2,4,6-trinitrobenzenesulphonic acid, 627, 2074.  
 2,4,6-tri-(2-pyridyl)-1,3,5-triazine, 144, 2762.  
 tris-1,10-phenanthroline -  $\text{Fe}^{\text{II}}$ , 52, 175, 240.  
 unithiol (2,3-dimercaptopropane-1-sulphonic acid, Na salt), 2356, 2360.  
*o*-vanillin oxime (2-hydroxy-3-methoxybenzaldehyde oxime), 172.  
 4,4'-vinylenedipyridyl, 1767.  
 zincin [5-(2-carboxyphenyl)-1-(2-hydroxy-5-sulphophenyl)-3-phenylformazan], 977.
- Recording**, statistical analysis of large numbers of tracings, 1623.
- Reductants**, detmn., radiom., with neutron-activated Ag as reagent, 2332.
- Reducers**, silver, Walden, prepn. of, 1740.  
 use of columns as, 1045.

**Refractometry**, differential interference instrument for, 2313.

**Refractories**, detmn. of H, N and O in, by vacuum de-gassing, 37.

**Renin**, assay, in blood plasma, 3189.

**Reseptyl**, sepn. from related sulphonamides and detmn., by TLC, 2154.

**Resin acids**, sepn., by GLC and TLC, 1963.

**Resins, natural**, identn., u.v. spectroph., 1975.

**Resins, synthetic**, alkyl-, detmn. of acid values of, automated, 1978.

detmn. of formaldehyde in, 2578.

of plasticisers in, by GLC, 1977.

epoxy-, sepn., paper chrom., 1976.

phenol-formaldehyde, paper and thin-layer chromatography of reaction mixtures for, 2577.  
 thermosetting, detmn., in glass-fibre-reinforced articles, i.r. spectroph., 1389.

**Resorcinol**, monoacetate, detmn., in the commercial product, by GLC, 3229.

—, 4-(2-pyridylazo)-, co-ordinating properties of ligand systems related to, 532.

**Retinol**, detmn., of stability of, in org. solvents, by u.v. irradiation, 2102.

**Rhenium**, detmn., by neutron activation, 1260.

by solvent extraction - photom., 1866, 2459.

in copper dust, polarogr., 570.

in minerals, ores or rocks, spectrogr., 656.

in molybdenite concentrates, spectroph., 137.

in sulphide minerals, by catalytic method, 1865.  
 of Fe in, photom., 660.

photom., 1259.

potentiom., choice of titrant for, 3013.

sepn. from soln., by ion exchange - solvent extraction, 1867.

**Rhenium, reagents for**, 2-mercaptobenzoic acid, 1259.

methylenegreen, 2459.

2-pyrazoline-1-carbodithioic acid, deriv. of, 1866.

**Rhenium alloys**, detmn. of Re in, spectroph., 2460.

**Rhodium**, detmn., by solvent extraction - flame photom., 1885.

in minerals, ores or rocks, by fire assay - spectrogr., 1886.

of  $\text{Rh}^{\text{III}}$  in presence of other Pt metals, Au and Ag, by solvent extraction - spectroph., 1884.

simult. with  $\text{Ru}^{\text{III}}$ , spectroph., 678.

simult. with Pd, Ru and Ag, X-ray spectrogr., 2343.

**Rhodium, reagents for**, 4-hydroxycoumarin oxime, 678.

1-(2-pyridylazo)-2-naphthol, 1884.

**Rhodizonic acid**, evaluation of, as qual. reagent, 1100.

**Rhubarb**, detmn. of anthraquinone deriv. in, spectroph., 2686.

**Rhynchoelline**, TLC of, 3204.

**Riboflavin**, detmn., spectroph., 1479.

sepn. from foods, paper chrom. and identn. by u.v. and fluorescence spectra, 1550.

**Ribose**, detmn., in presence of 2-deoxy-D-ribose, spectroph., 1922.

**Rice**, detmn. of amylose in, by starch-iodine test, accuracy of, 2708.

of pesticides in, by GLC, 960.

**Ricinoleic acid**, sepn. of impurities from, by GLC, 726.

**Ring colorimetry**, use of, on ultra-micro scale, 1048.

**Ring-oven method**. (See *Ring colorimetry*.)

**Rocks**. (See *Minerals, ores and rocks*.)

**Rubber**, dust, sepn. and identn. of polycyclic aromatic hydrocarbons in, 3119.

fillers for, detmn. of Mn in, spectroph., 788.

**Rubber**—*continued*

identn., by pyrolysis - GLC, 1395.  
 latices, ammonia-preserved natural, B.S.I. standard for, 787.  
 natural raw, B.S.I. specification for, 3118.  
 study of, by pyrolysis - GLC, 776.  
 vulcanised, identn. of accelerators and anti-oxidants in, by TLC, 1397.  
 of bloom on, by TLC, 1396.

**Rubidium**, detmn., in sea water, flame photom., 417.

**Rumen fluid**, detmn. of carboxylic acids in, by GLC, 2032, 2618.

**Ruthenium**, detmn., conditions for alkali fusion, 2479.

in catalysts, polarogr., 1883.

in mixtures with  $\text{UO}_2$ , spectroph., 169.

in presence of Pd, Rh and Ag, X-ray spectrogr., 2343.

in UC - Ru cermets, by isotope dilution, 610.

of  $\text{Ru}^{\text{III}}$ , simult. with  $\text{Rh}^{\text{III}}$ , spectroph., 678.

simult. with Os, by neutron activation, 679.

sepn. of impurities from, by solvent extraction, 1882.

solvent extraction of, with quaternary ammonium bases, as  $\text{RuNOCl}_2^{\cdot-}$ , 170.

**Ruthenium, reagents for**, 4,7-diphenyl-1,10-phenanthroline, 169.

4-hydroxycoumarin oxime, 678.

**Rye**, milling product of, evaluation by light reflectance, leucometer for, 371.

**S**

**Saccharides**. (See also *Carbohydrates; Sugars*.)  
 mono-, benzylated, sepn. from oligosaccharides, by TLC, 1923.

**Saccharin**, detmn., in foods, spectroph., 1551.  
 of *p*-sulphamoylbenzoate in, paper chrom., 2186.

**Salicylic acid**, detmn., by solvent extraction - spectroph., 244.

sepn. of salts, esters and complexes with purine bases of, in pharm. prep., by TLC, 3192.

—, **acetyl**-, 2-diethylaminoethyl ester, detmn., photom. and argentim., 930.  
 volum., 929.

—, **4-amino**-, Na salt, detmn., in presence of 3-aminophenol, spectroph., 938.

**Samarium oxide**, detmn., of impurities in, spectrogr., 1176.

**Sampling**, apparatus for liquids, 1613P.

study of problem of, 5.

**Scandium**, detmn., as pyrophosphate, by isotope dilution, 595.

atomic-absorption spectroph., 2927.

in minerals, ores or rocks, by neutron activation, 2392.

in Y salts, photom., 2920.

of impurities in, spectrogr., 2393.

spectroph., 2391.

solvent extraction of, with acetylacetone, 596.

**Scandium, reagent for**, methylthymol blue, 2391, 2920.

**Schizandra chinensis**, detmn. of org. acids in, paper chrom. - spectroph., 2126.

**Schradan**, detmn. of rate of hydrolysis of, by GLC, 1588.

**Sea water**. (See under *Water, natural*.)

**Sebacic acid**, dimethyl ester, detmn. of Pt in products of synthesis of, spectroph., 3070.

**Selenate**,  $^{76}\text{Se}$ -labelled, removal from plant extracts containing  $^{76}\text{Se}$ , 1411.

**Selenite**,  $^{76}\text{Se}$ -labelled, removal from plant extracts containing  $^{76}\text{Se}$ , 1411.

sepn. from  $\text{SeO}_4^{2-}$ , 1237.

**Selenium**, detection, atomic-absorption spectroph., 2860.

detmn., amperom., 122.

atomic-absorption spectroph., 2972.

coulom., 1234.

gravim., 642.

in biol. materials, in presence of As, Br, Hg and Sb, gamma-spectrum., 290.

in copper concentrates, polarogr., 1777.

in germanium and Ge dioxide, spectroph., 615.

in industrial materials, volum., 1231.

in presence of other elements, photom., 1232.

in sulphide ores, ion-exchange chrom., 2994.

of Cl in, a.c. polarogr., 1852.

of Cu in, by neutron activation, 1148.

of distribution of  $^{76}\text{Se}$  between  $^{76}\text{SeO}_3^{2-}$  and  $^{76}\text{SeO}_4^{2-}$  in plant extracts labelled with  $^{76}\text{Se}$ , 1411.

of impurities in, spectrogr., study of, 2444.

of SeI<sup>v</sup>, catalytic method for, 1850.

coulom., 643, 2442.

photom., 1232.

spectroph., 1233, 1851.

polarography of, effect of surfactants on, 2443.

sepn. from other metals, on  $\text{Sn}^{\text{IV}}$  phosphate and tungstate papers, 1112.

**Selenium, reagents for**, 3,5-diethyl-2,6-dimercaptothiopyran-4-one, 2869.

diphenylthiocarbazine, 1233.

4-hydrazinobenzenesulphonic acid, 615.

2-mercaptobenzothiazole, 1851.

N-phenylanthranilic acid, 1232.

**Selenomethionine**, detmn., in biol. materials, paper chrom. with neutron activation of spots, 1457.

**Semiconductors**, analysis of B - P and B - As, 2909.  
 pulse polarogr., 2330.

CdS-type, detmn. of impurities in, 2377.

detection of Te in, spot test for, 1126.

detmn. of Sb, Se and Te in, amperom., 2869.

of As in, in presence of In, a.c. polarogr., 2973.

of Cu, Ge and Se in, polarogr., 1119.

of Ga in, oscillopolarogr., 2387.

of Ge and Se in, oscillopolarogr., 2414.

of Ge, Se and Zn in, oscillopolarogr., 2868.

of impurities in, by neutron activation, 2331.

in Cd and Zn selenides and sulphides, photom., 2376.

of O in, by isotopic equilibration, 1225.

of Te and Zn in, a.c. polarogr., 2445.

Zn - In - S type, analysis, 2865.

**Senna**, detmn. of aglycones in, by solvent extraction - colorim., 1506.

of anthraquinone deriv. in, spectroph., 2686.

**Sensitivity**, meaning of, 530.

**Septonex**. (See *Ammonium compounds, quaternary*, (5-carboxypentadecyl)trimethyl-, ethyl ester.)

**Serotonin**. (See *Tryptamine, 5-hydroxy*.)

**Sesquiterpenes**, naturally occurring, i.r. spectra of, 1371.

**Sewage**, detmn. of dodecylbenzenesulphonate in, spectroph., 1605.

of oils and greases in, solvent-extraction procedure for, 1021.

of total org. C in, automated, 1019.

**Shea-nut oil**, analysis of fatty acids of, by urea fractionation and GLC of methyl esters, 1571.

**Sialomucopolysaccharides**, behaviour on Sephadex gel, 3139.

**Silage**, detmn. of organophosphorus pesticides in, by GLC, temp.-programmed, comparison of columns for, 1589.

**Silane**, detmn., in mixtures with  $\text{GeH}_4$ ,  $\text{PH}_3$ ,  $\text{AsH}_3$ ,  $\text{H}_2\text{S}$  and  $\text{H}_2$  gas chrom., 613.

- Silane**, determination—*continued*  
of B compounds in, mass spectrom., 2942.  
of impurities in, mass spectrom., 2943.
- , **tetra-alkoxy-**, detmn. of Si in, by solvent extraction - conductim., 2941.
- , **trichloro-**, detmn. of impurities in, by kinetic method, 2415.
- , **trichloromethyl-**, detmn. of impurities in, by neutron activation, 2331.
- , **trifluoro-**, detmn. of impurities in, by 'frozen-drop' method, 1189.
- Silanol**, deriv. of, detmn., volum., 235.  
org., detmn. of  $H_2O$  in, by modified Karl Fischer method, 1341.
- Silica**, detmn. of impurities in, spectrogr., 2944.
- Silicates**. (See also *Minerals, ores and rocks*.)  
detmn. of Si in, by solvent extraction - conductim., 2941.
- Silicon**, analysis, X-ray spectrogr., diffraction effects in, 1190.  
detmn., in evaporated films, by neutron activation, 1818.  
in minerals, ores or rocks, by neutron activation, 88.  
in presence of B, photom., 193.  
of P, 2411.  
of impurities in, by 'frozen-drop' method, 1189.  
by neutron activation, 2331.  
simult. with P, atomic-absorption and u.v. spectrogr., 2428.  
semiconductor, detmn. of Cl in  $SiO_2$  films on, X-ray spectrogr., 1194.  
sepn. of P from, by solvent extraction, 2429.
- Silicon alloys**, detmn. of Si in Fe-Si or Cr-Si, photom., 1271.
- Silicon carbide**, detmn. of Al, Ca, Fe and Mg in, spectrogr., 1191.  
of Al, Fe and alkaline-earth elements in, 90.  
of impurities in, by neutron activation, 2331.
- Siloxane**, polymeric organometallic deriv. of, detmn. of Si in, by solvent extraction - conductim., 2941.
- Silver**, adsorption of, on glass, 2361.  
detection, paper chrom., 552.  
detmn., amperom., 2360.  
atomic-fluorescence spectrogr., 2359.  
by gel diffusion, 30.  
in electroplating soln., complexom., 1779.  
in presence of Cu, potentiom., 1780.  
of Cu and Tl, amperom., 1123.  
of  $Hg^{II}$ , polarogr., 50.  
of other metals, potentiom., 1149.  
in skin, by neutron activation, 282.  
polarogr., 1781.  
potentiom., 572.  
by catalysis of  $Ce^{IV}$  -  $As^{III}$  reaction, 571.  
simult. with Pd, Rh and Ru, X-ray spectrogr., 2343.  
sepn., by redox exchange with Hg, 3C.  
of Hg from, comparison of methods for, 2906.
- Silver reductor**, Walden, prepn. of, 1740.
- Simazine**, detmn., thin-layer chrom., spray reagent for, 406.
- Skin**, detmn. of Cu, Ag, Zn and As in, by neutron activation, 282.
- Slags**, analysis, spectrogr., by 'tape technique', 665.  
detmn. of As in, X-ray spectrogr., 2476.  
fluoride, detmn. of silicic acid in, volum., 2945.  
iron and steel, analysis, 153.  
open-hearth, detmn. of  $Al_2O_3$  in, spectrogr., 2468.
- Sodium**, detmn., in biol. tissues, flame photom., 284.  
in presence of other metals, volum., 559.  
of impurities in, atomic-absorption spectrogr., 41.
- Sodium**, determination—*continued*  
potentiom., with sodium-glass electrode, 1134.  
simult. with Li flame, photom., 561.  
sepn. from Li and K, ion-exchange chrom., 2353.  
of  $^{23}Na$  from  $^{24}Mg$  by ion exchange, 2894.
- Sodium chloride**, detmn. of Cu and K in, atomic-absorption spectrogr., 2354.  
of V in, by neutron activation, 42.
- Sodium hydroxide**, detmn. of Ba and Ca in, complexom., 562.
- Sodium iodide**, detmn. of Ca and Mg in, spectrogr., correction for blank in, 1136.
- Sodium peroxide**, hydrated, study of, by thermal analysis, 1135.
- Sodium phosphate**, errors during ignition of, in presence of  $Na_2SO_4$ , 2334.
- Sodium tetraphenylborate**, detmn., by solvent extraction - radiom., with use of  $^{137}Cs$ , 740.
- Soil**, analysis, diffuse-reflectance spectrogr., 2735.  
three-channel flame photometer for, 1659.  
assay of phosphatase in, photom., 986.  
detmn. of B in, fluorim., 2204.  
spectrogr., 2210.  
of bromacil in, by TLC, 2740.  
of Fe in, potentiom., 3263.  
of Pb in, spectrogr., 1577.  
of lime reserve in, volum. or manom., 3262.  
of  $NO_3^-$  in, comparison of methods for, 2737.  
of N in, comparison of automated Dumas and Kjeldahl methods for, 2205.  
of organochlorine pesticides in, semi-quant., automated, 2745.  
of Se in, volum., 1231.  
of trace elements in, spectrogr., extraction technique for, 399.  
solvent extraction of  $^{14}C$ -labelled dieldrin from, comparison of methods for, 2744.
- Solapson**, detection of dapsone and semisolapson in, thin-layer chrom. - u.v. spectrogr., 1523.
- Solvent extraction**, column, use of polymers in, 1038.  
of metals with acetylacetone, 547.  
with K ethylxanthate, 2855.  
with tributyl phosphate, 2857.  
with tributyl phosphate and tridodecylamine, 2858.  
with trioctylarsine oxide for, 2856.  
static technique for, 1620.
- Solvents, organic**, detection, i.r. spectrogr., 195.  
detmn. of aromatic polycyclic hydrocarbons in, by TLC - spectrogr., 2734.  
column chrom., 2530.  
non-hydrolytic, application of Hammett acidity function to, 493.
- Soot**, identn. of polycyclic aromatic hydrocarbons in, by GLC, 1004.
- Sorbic acid**, detmn., in orange juice, spectrogr., 384.  
identn., in foods, by TLC, after bromination, 1552.
- Sorbitol**, detmn., in fruits, thin-layer chrom. - colorim., 377.  
in lemonade, volum., 3252.  
fatty acid esters, identn., in foods, paper and thin-layer chrom., 3251.
- Soya bean**, de-hulled, detmn. of crude fibre in, by polarising microscope, 403.  
detmn. of fluorodifen in, column - gas chrom., 2742.  
of oil in, by NMR or gravim., 1548.
- Soya-bean oil**, detmn. of carotenoids and pheophytins in, column chrom. - spectrogr., 980.
- Spectrofluorimetry**, apparatus for, energy-compensated, adjustment of, 1680.



- Spectrofluorimetry, gamma-ray nuclear resonance**, applications of, 1745.  
review, 473.
- Spectrography, emission**, adaptation of Zeiss tri-prismatic apparatus for, 3320.  
1967 annual review, 1734.  
automatic data-reduction computer program for, 1658.  
detmn. of intensity ratios in, use of line-width in, 2294.  
electrode for discharge tubes in, 3318.  
errors in photographic methods, 2821.  
evaluation of multiple detmn. in, 466.  
excitation in, by d.c. arc, excitation of liquid - liquid extraction residues for, 544.  
short-circuiting technique for breaking down large gaps in, 2291.  
use of Li compounds as buffers in, 2818.  
by laser probe, of homogeneous powders, 2820.  
low-voltage h.f. sparks for, 464.  
low-wattage micro-wave induced Ar plasmas for, 465.  
use of plasma jet for, 161.  
fused-silica cell for, 1657.  
instrumental technique for micro-analysis, 3319.  
intensification of blackening of photographic plates in, 2293.  
of metals, vaporisation of electrodes in, 2817.  
prepn. of samples for, Ar-arc vacuum furnace for, 1023.  
stabilisation of high-pressure Xe arc in, 463.  
use of continuous ultrasonic nebulisation in, 2292.  
of h.f. electrodeless discharge at atmospheric pressure in, 2819.
- Spectrography, emission, X-ray**, 1967 annual review, 1734.  
correction for absorption of incident radiation in, 1084.  
detmn. of elements of low atomic number by, method of earthing electrodes in, 2815.  
filtration of L lines from primary beam, in 2287.  
method of recording radiation in, 1656.  
modifications of General Electric instrument for, 1081, 1082.  
relation of fluorescence yield of an element to the spectral distribution of the exciting beam, 1083.  
review, 3317.  
use of point-anode proportional counters in, 1655.  
of thin deposits in, 1654.
- Spectrometry, beta-ray**, improvement of resolution of toroid-sector-type instrument, 3355.
- Spectrometry, electron spin resonance**, instrument for reproduction of curves in, 2810.  
recording of second derivative of signal in, 2830.
- Spectrometry, Fourier**, spectral recovery in, 2284.
- Spectrometry, gamma-ray**, shield for, 518.
- Spectrometry, mass**. (See *Mass spectrometry*.)
- Spectrometry, microwave**, applications of, 3335.
- Spectrometry, nuclear magnetic resonance**, 1967 annual review, 1734.  
bands of solvents used in, 485.  
calibration of noisy signals in, 2308.  
heating system for, 2828.  
phase-lock circuit for 100-MHz instrument, 2307.  
removal of dissolved O from samples for, 2829.
- Spectrometry, nuclear quadrupole resonance**, use of modified Siemens coaxial bridge as, 484.
- Spectrometry, proton magnetic resonance**, increase of solvent properties in, 2306.
- Spectrometry, Raman**, apparatus for, 3322P.  
cryostat for low-temp. measurements, 2295.  
excitation in, use of Ar-ion laser beam in, 3323.  
review of progress, 468.
- Spectrophotometry, absorption**, adaptation of recording instruments for derivative spectra, 3331.  
1967 annual review, 1734.  
apparatus for simult. polarography, 2823.  
attachment to Cary model 14R for converting records into digital form, 1090.  
calculation of limiting concn. and detection limit in, 2303.  
cell for volatile soln. under pressure at temp. up to 300°, 475.  
comparison of instruments for, 1087.  
double-path quartz micro-cell for, 474.  
i.r., anaerobic filling of cells for, 3333.  
applications in far region, 2863.  
bidirectional reflectance accessory for, 476.  
carbon furnace source for, 2304.  
cell for corrosive gases, 1666.  
for use at high temp., 2827.  
at 200°, 478.  
in controlled atmosphere, at 25° to 500°, 480.  
up to 500°, 479.  
evaluation of mathematical functions to fit i.r. band envelopes, 482.  
minimum detectable concn. in, 3334.  
KCl pressed discs for, reactions of  $\text{Na}_2\text{CO}_3$  during prepn. of, 1668.  
prepn. of halide discs for, 481.  
report of symposium on, 2787.  
sealing of windows for ultra-high-vacuum use, 2305.  
AgCl matrix for, 2826.  
technique for corrosive and moisture-sensitive solids, 1667.  
lamps for production of monochromatic radiation for, 2286.  
ratio of orthogonal function coefficients as index of purity in, 1662.  
sequential sampling system for, 2300.  
sources for, hollow-cathode tubes and discharge lamps for, 1080, 1091.  
stabilised voltage source for, 1663.  
temp. control in, 2824.  
ultra-micro cells for Gifford 300 instrument, 3330.  
u.v., apparatus for short-wave region, 1664.  
bakeable silica - metal sealed window for, 1665.  
cooling device for use in liquid O, 1089.  
double-beam vacuum instrument for, 3332.
- Spectrophotometry, atomic-absorption**, applications in petroleum analysis, 757.  
effect of amines on, 1086.  
modulator for hollow-cathode lamps for, 1660.  
optimum conditions for, 1085.  
photographic recording in, 470.  
sampling of solids for, without prior dissolution, 1661.  
sources for, Ar - H flame as, 2860.  
hollow-cathode lamps as, 3326, 3327.  
separated air -  $\text{C}_2\text{H}_2$  flame as, 2861.  
 $\text{N}_2\text{O}$  -  $\text{C}_2\text{H}_2$  flame as, 3329.  
ultrasonic atomiser for, 2298, 3328.  
use of solvent extraction in, 469.
- Spectrophotometry, atomic-emission**, absorption - emission intensity measurements in, 2296.  
1967 annual review, 1734.  
optimum conditions for, 1085.  
ultrasonic sprayer for, 2298.  
use of solvent extraction in, 469.

- Spectrophotometry, atomic-fluorescence**, effect of type of flame on limits of detection in, 472.  
excitation source for, hot hollow-cathode lamp as, 471.  
iodine electrodeless discharge tube as, 1839.  
Hg-line as, 2872.  
optimum conditions for, 1085.
- Spectrophotometry, flame.** (See *Spectrophotometry atomic-emission.*)
- Sphingomyelins**, detmn., in biol. tissues and fluids, paper chrom. - colorim. or densitom., 1441.
- Spices**, analysis, application of GLC and TLC in, 1095C.
- Spiramycin**, detmn., in chicken tissues, column - thin-layer chrom. - microbiol., 2607.
- Spirits, potable**, analysis, by GLC, 979.  
detmn. of ethanol and extract in, refractom. - pyknom., tables for, 1569.  
of higher alcohols in, spectroph., comparison of colour reagents for, 2201.
- Starch**, detmn., in cereal products, review of methods for, 3243.  
esterified, N-containing, fractionation of, column chrom., on glass powder, 2568.
- Statistics**, evaluation of limiting detectable concn. by, 1099.  
role of, in analysis, 6.
- Steel**, analysis of Nb - Sn films on, polarogr., 113.  
spectrogr., effect of micro-structure on, 1267.  
chromium, analysis, X-ray spectrogr., effect of structure and surface condition on, 1875.  
detmn. of Al in, spectrogr., 3023.  
of austenite in, X-ray diffractom., 2473, 3027.  
of B in, by neutron activation, 3022.  
spectrogr., 2466, 2467.  
of C in, by combustion - i.r. spectroph., 2472.  
gasom., nomogram for, 669.  
of Ce in, spectrogr., 2467.  
spectroph., 667.  
of Cr, Mn and Ni in, spectrogr., with plasma jet, 161.  
of Co in, spectrogr., 1878.  
of 'electrolytic' H in, 2465.  
of H, N and O in, by isotopic exchange - spectrogr., 1269.  
of In in, polarogr., 1270.  
of La and Y in, spectrogr., 2469.  
of Mn and Si in, spectrogr., effect of counter-electrode material on, 2475.  
of Mo in, flame spectroph., 1876.  
spectroph., 159.  
of Ni in, photom., 3025.  
of N in, spectrogr., 3024.  
and O in, by He carrier gas method, 1278.  
of O in, by neutron activation, direct read-out system for, 671.  
of O-inclusions in, 1275.  
of P in, gravim., 157.  
of Si in, by GLC of chlorides, 1873.  
by intensity of X-rays produced by electron-beam irradiation, 154.  
by proton activation, 1272.  
spectrogr., line interferences in, 2474.  
of S in, by combustion - volum., 1228.  
of W in, photom., 1877.  
of V in, by solvent extraction - photom., 2983.  
spectroph., 158, 1874.  
of Zr in, by solvent extraction - spectrogr., 1273.  
spectroph., 156.  
hypocretoid, detmn. of C in, by microscopy of perlite in, 2471.  
identn. of oxides in, i.r. spectroph., 670.
- Steel**—continued  
inclusions in, non-metallic, analysis, photom., 3026.  
irradiated, detmn. of  $^{54}\text{Mn}$  and Fe in, by use of Li-drifted Ge detector, 160.  
prepn. of analytical standards of, 664.  
sampling of, immersion mould for, 666.  
stainless, detmn. of Cr, Fe and Ni in, complexom., 2338.  
of Nb in, spectroph., 668.
- Steroids**, analysis, in faeces, ion-exchange - thin-layer chrom., 840.  
differentiation of pseudopolymorphs from true polymorphs of, i.r. spectroph. and thermomicroscopic, 2139.  
hormones, sepn., by GLC, review, 848.  
NMR and i.r. spectra of 24-ene and 24-saturated, 2632.
- , **17,21-dihydroxy-20-oxo-**, detmn., by the Porter - Silber reaction, interference by phenothiazine in, 2635.  
in urine, column chrom. and use of the Porter - Silber reaction, 2058.
- , **3 $\beta$ -hydroxy-5-ene**, detmn., in blood and urine, thin-layer chrom., 2061.
- , **oxo-**, formation and GLC behaviour of isomeric methoxime deriv. of, 2633.
- , **-17-oxo-**, detmn., in blood plasma, by TLC and GLC of heptafluorobutyrate deriv., 1445.  
in urine, colorim., comparison of methods for, 2060.  
13-epimeric, sepn. of pairs of, by GLC, 841.  
sepn., in urine, by GLC, comparison of methods of hydrolysis for, 839.  
paper chrom. - colorim., 2634.  
sulphates, detmn., in blood plasma, by modified Zimmermann reaction, 842.
- , **3-oxo-4-ene** detmn., spectroph., after reduction with  $\text{NaBH}_4$ , 3154.  
polyhydric, sepn., by TLC, as trimethylsilyl ethers, 1442.  
pyridinium sulphates of, sepn., by TLC, 1049.  
sepn., by combined GLC and TLC, as trimethylsilyl deriv., 2051.  
of water-sol., column chrom. on diethylaminoethylcellulose, 2630.  
trimethylsilyl ethers of, prepn. of, 846.
- Sterols**, sepn. of 8-ene from 7-ene isomers of, column chrom., 2631.
- Stibnite**, detmn. of O in thin layers of, 2978.
- Stilbene**, deriv. of,  $R_F$  values and u.v. spectra of, 2037.  
hydroxy-deriv. of, analysis, by GLC and TLC, 242.
- Stilboestrol**, detection, in urine, by TLC, 816.
- Straw**, detmn. of chlorocholine in, column chrom. - spectrogr., 991.
- Strontium**, detmn., in Ba salts, spectrogr., 2372.  
in bone, in presence of Ca, flame photom., after removal of  $\text{PO}_4^{3-}$ , 1403.  
in foods, ion-exchange chrom. - flame photom., 2166.  
in minerals, ores or rocks, by isotope dilution, 1670.  
in sea water, flame photom., 3279.  
of  $^{88}\text{Sr}$  and  $^{90}\text{Sr}$  in rain water, ion-exchange chrom. and beta-counting, 1600.  
ring colorim., 2369.  
prepn. of carrier-free  $^{88}\text{Sr}$  from neutron-irradiated  $\text{Y}_2\text{O}_3$ , 2921.  
of carrier-free  $^{88}\text{Sr}$  -  $^{90}\text{Sr}$  from fission products, by solvent extraction, 2901.  
sepn. from Ca and Ba, by ion exchange, 1153.
- Strontium**, reagent for, nitchromazo, 2372.

- Stryphanthin-K**, detmn. of mol. extinction coefficient of, spectroph., 921.
- Strophanthus gratus**, detmn. of ouabain in, thinlayer chrom. - spectroph., 2685.
- Strychnine**, nitrate, detmn., in Strychnoarsin, spectroph., 2683.
- Strychnos alkaloids**, tertiary, GLC of, 1096C.
- Strychnos nux-vomica**. (See *Nux vomica*.)
- Styrene**, 4-isopropyl- $\alpha$ -methyl-, detm., polarogr., 272.
- ,  $\alpha$ -methyl-, detmn., polarogr., 272.
- ,  $\alpha$ ,2,4- and  $\alpha$ ,3,5-trimethyl-, detmn., polarogr., 272.
- Succinimide**, *N*-chlorophenyl deriv. of, TLC of, 3084.
- Succinylcholine**, detection, in biol. tissues, in presence of other muscle relaxants, ion-exchange - spectroph., as reineckate, 809.
- Sucrose**, collection of density-gradient fractions of, method for, 2774.
- detmn. by  $\text{IO}_4^-$  oxidation, 1319.
- in insect organs, spectroph., 2612.
- sepn. from glucose and fructose, in fruit pulps, by TLC, 3246.
- soln. of, relationship between ref. ind. and sp. gr. of, 1538.
- Sugar**. (Entries here refer to commercial beet or cane sugar.)
- cane-, fractionation and characterisation of colour components of, 2171.
- refined, detmn. of Cu and Pb in, polarogr., 370.
- of glucose and fructose in, enzymic - photom., 372.
- Sugar alcohols**, detmn., in urine, ion-exchange chrom., 304.
- Sugars**. (See also *Carbohydrates*.)
- analysis of mixtures of, by GLC, 1321.
- detmn., by  $\text{IO}_4^-$  oxidation, 1319.
- in wine, by GLC, 2730.
- ion-exchange chrom. - spectroph., 2025.
- identn., by TLC, 2513.
- phosphates, sepn. by ion exchange, 1322.
- reducing, detmn., in bacterial cell walls, spectroph., 2611.
- in wine, cerim., 1568.
- ultra-micro-, photom., 2514.
- sepn., ion-exchange chrom., 1920.
- sulphates, i.r. spectra of, 1324.
- TLC of, 2031.
- at  $-18^\circ$ , 719.
- u.v. absorption of, in conc.  $\text{H}_2\text{SO}_4$ , 1323.
- Sulphadiazine**, detmn., in tablets, in presence of sulphamethyldiazine and sulphadimidine, by GLC, 2155.
- Sulphadimethoxine**, detmn., in pharm. suspensions, by X-ray diffraction, 940, 2699.
- Sulphadimidine**, detmn., in tablets, in presence of sulphadiazine and sulphamethyldiazine, by GLC, 2155.
- Sulphafurazole**, acetyl-, detmn., in pharm. suspensions, by X-ray diffraction, 940.
- Sulphamethoxazole**, detmn., spectroph., 361.
- , acetyl-, detmn., in pharm. suspensions, by X-ray diffraction, 940.
- Sulphamethyldiazine**, detmn., in tablets, in presence of sulphadiazine and sulphadimidine, by GLC, 2155.
- Sulphamic acid**, detmn., coulom., 10.
- in soln. of salts, potentiom., 2967.
- Sulphamide**, sepn. from imidodisulphamide and trisulphamide, ion-exchange chrom., 1230.
- Sulphamipyrrine**, identn., by TLC, 3218.
- Sulphanilamide**, detmn., spectroph., 361.
- Sulphate**, analysis of mixtures with  $\text{S}^{2-}$  and  $\text{SO}_3^{2-}$  labelled with  $^{35}\text{S}$ , 2992.
- detmn., by isotope dilution, 1188.
- in electroplating soln., volum., 1778.
- in natural water, ion-exchange chrom. - spectroph., automated, 2757.
- in presence of  $\text{Cl}^-$ , by ion exchange, failure of, 2993.
- in rain water, ion-exchange chrom. - volum., 2758.
- in wet-process phosphoric acid slurry, reagent and apparatus for, 3265P.
- nephelom., 641.
- stabiliser for, 1229.
- paper chrom., by isotope dilution, 1846.
- polarogr., 117.
- potentiom., with  $\text{SO}_4^{2-}$ -sensitive electrodes, 118.
- volum., with  $\text{Ba}(\text{ClO}_4)_2$ , indicators for, 637.
- Sulphide**, analysis of mixtures with  $\text{SO}_3^{2-}$  and  $\text{SO}_4^{2-}$ , labelled with  $^{35}\text{S}$ , 2992.
- detmn., coulom., 120.
- Sulphite**, analysis of mixtures with  $\text{S}^{2-}$  and  $\text{SO}_4^{2-}$ , labelled with  $^{35}\text{S}$ , 2992.
- detmn., in urine, paper chrom. - radiom., 2596.
- u.v. spectroph., as  $\text{Hg}^{II}$  complex, 1849.
- volum., 2441.
- Sulphite liquor**, detmn. of formic and acetic acids in, paper chrom., 3101.
- spent, detmn. of carbonyl compounds in, ion-exchange chrom., 1968.
- of sugars in, ion-exchange chrom., 1967.
- Sulphonamides**, detmn., in milk, spectroph., 2725.
- Sulphonic acids**, alkane-, paper chromatography of, 1955.
- aromatic, detmn., paper chrom. and electroph., 2C.
- Sulphonyl chlorides**, sepn. of  $\text{SOCl}_2$  and  $\text{SO}_2\text{Cl}_2$ , by GLC, 1848.
- Sulphoxides**, detmn., potentiom. and i.r. spectroph., 210.
- Sulphur**, detmn., in metals, by combustion - photom., 1227, 1228.
- in minerals, ores or rocks, by beta-ray back-scattering, 2990.
- in org. compounds, simult. with Cl, by O-flask combustion - photom., 199.
- in organophosphorus compounds, 739.
- of  $^{35}\text{S}$  in metals after proton irradiation, 638.
- elementary, detection, 1844.
- Sulphur dioxide**, detmn., in air, spectroph., 1595.
- in fruit juices or gases, starch - iodine-impregnated strip for, 383.
- in soln., polarogr., 640.
- spectroph., interferences in, 639.
- sepn. from  $\text{SO}_3$ , by GLC, 1848.
- Sulphur hexafluoride**, detmn. of impurities in, gas chrom., 121.
- Sulphur trioxide**, sepn. from  $\text{SO}_3$ , by GLC, 1848.
- Sulphuric acid**, alkyl esters, paper chromatography of, 1955.
- Sulthiame**, detmn., in blood serum and urine, thin-layer chrom. - spectroph., 2018.
- Superoxide**, detmn., in fused salts, voltamm., 115.
- electrochemical reduction of, 1843.
- Surface-active agents**. (See *Surfactants*.)
- Surfactants**. (See also *Ammonium compounds*, *quatarnary*; *Detergents*.)
- non-ionic, analysis of fatty acid 2-hydroxyethylamide - ethylene oxide condensates, 3099.
- detmn., in industrial wastes, photom., comparison of methods for, 1020.
- of critical micelle concn. of, by electrocapillary curves, 1952.
- Sweat**, identn. of amino-acids in, paper chrom., 2076.



## T

- TDE**, detmn., in kale, by GLC, improved solvent extractant for, 1584.  
sepn. from related organochlorine pesticides, by GLC, 2217.
- Tablets, medicinal**, detmn. of  $H_2O$  in, gas chrom., comparison with Karl Fischer method, 350.
- Talc**, detmn. of Sb in, photom., 1960.
- Tangerine oil**, identn. of monoterpenes in, gas chrom. - i.r. spectroph., 949.
- Tannin**, detmn., in liquors, u.v. spectroph., 276.
- Tantaloniobates**, analysis, 1288.  
detmn. of Pb, Th and U in, ion-exchange chrom., 112.
- Tantalum**, detmn. of Cr in, by solvent extraction - spectroph., 2439.  
of impurities in, spectrogr., 2340.  
in thin films of, spectrogr., 1217.  
of Mo in, photom., 1220.  
and W in, photom., 1842.  
of Nb in, by solvent extraction - spectroph., 114.  
of W in, a.c. polarogr., 1221.  
sepn. from Mo, Nb and W, column chrom., 1758.  
solvent extraction of, from HCl soln., 111.
- Tantalum, reagent for**, crystal violet, 1219.
- Tantalum - niobium ores**, phase analysis of, 635.
- Tantalum(V) oxide**, detmn. of Mo and W in, photom., 1842.  
together with  $Nb_2O_5$ , in minerals, gravim., 2438.
- Tapestry**, identn. of red lakes in, for detmn. of age, 771.
- Tartaric acid**, detmn., in effervescent tablets, potentiom., 2164.
- Taurine**, sepn. from its Se analogue, by GLC of silylated deriv., 3170.
- Tea**, analysis of volatile flavour constituents of, gas chrom. - i.r. and u.v. spectroph., 962.
- Teeth**, enamel, detmn. of C in, by deutron activation and autoradiography, 1404.  
of F - in, by isotopic dilution, 1412.
- Telluric acid**, polarogr. behaviour of, 123.
- Tellurite**, sepn. from  $TeO_4^{2-}$ , 1237.
- Tellurium**, detection, spot test for, 1126.  
detmn., amperom., 122.  
atomic-absorption spectroph., 645.  
coulom., 1234.  
gravim., 642.  
in presence of Se, volum., 2996.  
in semiconductors, a.c. polarogr., 2445.  
in sulphide ores, ion-exchange chrom., 2994.  
of Se in, polarogr., 1235.  
of  $Te^{IV}$ , coulom., 643, 2442.  
volum., 644.  
photom., 2996.  
sepn. from Bi, ion-exchange chrom., 2982.  
of radioisotopes of, 646.
- Tellurium, reagents for**, bismuthiol II, 2997.  
diantipyrinylmethane, 2994, 2997.  
3,5-diethyl-2,6-dimercaptothiopyran-4-one, 2869.
- Temik**. (See *Aldicarb*.)
- Temperature**, measurement of, in range  $400^\circ$  to  $500^\circ$ , apparatus for, 1723.  
of small differences of, 1721, 1722.
- Terbacil**. (See *Uracil, 3-t-butyl-5-chloro-6-methyl-*.)
- Terbium**, detmn., spectroph., 1177.
- Terephthalic acid**, detmn. of benzoic and phthalic acids in, ion-exchange chrom., 3081.
- Terpene alcohols**, i.r. spectra of, 2544.
- Terpenes**, mono-, esters of, identn., by GLC and TLC, 3C.  
sepn. from aromatic hydrocarbons, by GLC, 1916.
- Terphenyls**, TLC of, on carbon black, 2541.
- Terpin hydrate**, detmn., in elixirs, in presence of codeine and dextromethorphan, by GLC, 2160.  
in pharm. tablets, by GLC, 3235.
- Testosterone**, detmn., in blood plasma, by isotope dilution, 2054.  
by TLC and GLC, as heptafluorobutyrate, 1445.  
in urine, by TLC and GLC, 2055.  
simult. with epitestosterone, paper chrom. - spectroph., 845.  
propionate, detmn., in mixtures with progesterone and oestradiol benzoate, by TLC, 2140.  
sepn. from epitestosterone, by TLC, 3150.
- Tetracycline**, deriv. of, detmn., column and thin-layer chrom., 355.  
in nutrient fluids, paper chrom., as complexes with tetraphenylborate, 3210.  
detmn., in presence of related antibiotics, photom., 2137.  
hydrochloride, detmn. of anhydrotetracyclines in, spectroph., 2687.
- Tetradecanol**,  $H_2O$ -solubility of, 218.
- Tetrahydrite**, detmn. of Bi in, complexom., 2357.
- 1,3,5,7-Tetrazocine, octahydro-1,3,5,7-tetranitro-**, detmn., by GLC, 279.
- Textiles**, soiled, analysis of org. matter in, 3105.  
use of  $^{14}C$ - and  $^3H$ -labelled artificial soiling in detergency studies of, 1381.
- Thallium**, detection, in biol. materials, in presence of Pb and As, by TLC, 1405.  
of  $Tl^I$ , paper chrom., 552.  
detmn., complexom., indicators for, 593.  
in biol. materials, by solvent extraction photom., 1998.  
in presence of Cd and Ag, amperom., 1754.  
of Cu and Ag, amperom., 1123.  
in NaI single crystals, fluorim., 2876.  
in suspensions of  $TlCl$  or  $Tl_2Cr_2O_7$ , by ion exchange, 594.  
of Cu in, by neutron activation, 1148.  
of impurities in, by neutron activation, 2331.  
of  $Tl^I$ , by photom. titration, 1804.  
in presence of Cd, polarogr. or amperom., 1172.  
of  $Mo^{VI}$ ,  $W^{VI}$  and  $V^{V}$ , polarogr., 1171.  
potentiom., 2390.  
photom., 1166.  
pptn. of, by photo-generated  $IO_3^-$ , study of, 1107.  
sepn. of  $Tl^I$  and  $Tl^{III}$ , paper chrom., 1822.
- Thallium, reagents for**, crystal violet, 1998.  
Solochrome cyanine R, 1166.
- Thallium compounds**, organothallium(III) chloride complexes, paper electrophoresis of, 741.  
phenylthallium(III) dichloride, detmn., complexom., 2529.
- Theobromine**, detmn., in cacao bean, simult. with caffeine and theophylline, by TLC, 2197.  
in liquid cola extract, potentiom., 1502.  
in pharm. prep., in presence of Na benzoate and Na salicylate, by NMR, 918.
- Theophylline**, detection, in liquid cola extract, by TLC, 1502.  
detmn., in Belladrial tablets, potentiom. or argentim., 3199.  
in cacao bean, simult. with caffeine and theobromine, by TLC, 2197.  
in pharm. prep., in presence of Na benzoate and Na salicylate, by NMR, 918.  
in soln., conductim., 3181.

- Thermal analysis**, 1967 annual review, 1734.  
 differential, apparatus for fatty solids, 3364.  
 at high pressures, 522.  
 calibration of apparatus for thermometric and calorimetric measurements, 1714.  
 curves for melting, supercooling and solidification processes, 1716.  
 instrumental factors in, 3363.  
 reactions between org. compounds and inorg. diluents in, 523.  
 gravim., apparatus for, 519.  
 continuous-recording, 520.  
 vacuum, for  $-196^{\circ}$ , 521.
- Thermoluminescence.** (See *Luminescence*.)
- Thermometry**, Ge-resistance, below  $1^{\circ}\text{K}$ , 3365.  
 high-sensitivity quartz instrument for, 526.  
 use of sapphire-red thermopile assembly in, for temp. of  $1500^{\circ}$ , 3366.
- Thiacetazone**, detmn., in pharm. tablets, non-aq. volum., 937.
- Thiamine**, detmn., gravim., with tungstosilicic acid, 1479.  
 in dragées, simult. with pyridoxine, in presence of ascorbic acid, rutin and procaine, paper chrom. - spectroph., 3212.  
 in pharm. prep., spectroph., 2143.  
 thin-layer chrom. - spectroph., 3213.
- , **O-benzoyl-**, disulphide, detmn., in pharm. suspensions, X-ray diffractom., 940.
- Thiocarbide**, identn., by TLC, 1522.
- Thiocyanate**, detection in blood plasma, use of starch - iodic acid paper for, 2001.  
 detmn., in molten baths, volum., 2940.
- Thiols**, detection, paper chrom., reagents for, 2519.  
 ring colorim., 209.  
 detmn., amperom., 707.  
 identn., 3074.
- Thiosulphate**, detmn., in gelatin, colorim., 277.  
 paper chrom., by isotope dilution, 1846.
- Thorium**, detmn., by solvent extraction - complexom., 1178.  
 in biol. materials, by neutron activation, 1999.  
 in minerals, ores or rocks, by ion exchange, 1289.  
 in presence of Ce, Ti and Zr or of Ti, U and Zr, ring colorim., 1755.  
 of other metals, amperom., 1809.  
 photom., 1807.  
 spectroph., 606, 1179.  
 polarogr. behaviour of, 1808.  
 solvent extraction of, 605.
- Thorium, reagents for**, anthrapurpurin, 606.  
 1,1-diantipyrinylethane, 1178.  
 quinalizarin, 1807.
- Thorium(IV) nitrate**, detmn. of impurities in, by neutron activation, 2931.
- Thorium(IV) oxide**, detmn., in biol. tissues, by neutron activation, 1426.  
 of adsorbed  $\text{H}_2\text{O}$  on, coulom., 1765.  
 of La in, by neutron activation, 2430.
- Thoron.** (See *Radon*.)
- Thorotrast.** (See *Thorium(IV) oxide*.)
- Thymol**, detmn., in aq. soln. or solvents, absorption., 365.  
 polarogr., by reaction with 1-fluoro-2,4-dinitrobenzene, 768.  
 sepn. from carvacrol, by TLC, 1959.
- Thymus**, detmn. of Ca in, ion-exchange chrom. - spectroph., 800.
- Thyroacetic acid, iodo-**, sepn., from thyronines and tyrosines, in aq. soln., by solvent extraction, 873.
- Thyroid gland**, detmn. of hormonal I in, thin-layer chrom. - spectroph., 2690.
- Thyroid hormones**, detmn., in presence of iodine-containing X-ray contrast media, 3178.
- Thyronine**, iodo-deriv., detection, by TLC, 872.  
 GLC of trimethylsilyl deriv. of, 2646.  
 sepn. from iodo-tyrosines, by solvent extraction, 873.
- Tin**, analysis, spectrogr., 2955.  
 detmn., in foods, colorim., dry ashing of samples for, 2706.  
 iodim., evaluation of the Polish standard method for, 368.  
 in metals and alloys, by solvent extraction - spectroph., 617.  
 of B in, by solvent extraction - photom., 2956.  
 of Cu in, by neutron activation, 1148.  
 of  $\text{Sn}^{\text{IV}}$ , by solvent extraction - photom., 92.  
 photom., comparison of reagents for, 616.  
 volum., 36.  
 sepn. of  $\text{Sn}^{\text{II}}$  and  $\text{Sn}^{\text{IV}}$ , paper chrom., 1822.
- Tin, reagents for**, lumogallion, 92, 2388.  
 phenylfluorone, 617.
- Tin, organic compounds of**, detmn. of S in, volum., 702.
- Tin, organo-chlorides of**, detmn., potentiom., 1935.
- Tin(IV) hydroxide**, differentiation from  $\text{Sn}(\text{OH})_2$ , spot test for, 1126.
- Tin-plate**, analysis, spectrogr., 1823.
- Titanates**, alkaline-earth, detmn. of F<sup>-</sup> in, photom., 1250.
- Titanium**, complex with  $\text{H}_2\text{O}_2$ , effect of acid on formation of, 39.  
 with N-phenylsalicylhydroxamic acid, quant. pptn. of, 623.  
 with xylenol orange, solvent extraction of, 1199.  
 detmn., atomic-fluorescence spectroph., 33.  
 by reduction of  $\text{Ti}^{\text{IV}}$  with zinc or cadmium, apparatus for, 95.  
 by solvent extraction - spectroph., 94.  
 gravim., 94.  
 in ceramics and quartz, a.c. polarogr., 3045.  
 in ferriionobium, spectroph., 156.  
 in minerals, ores or rocks, atomic-absorption spectroph., 1819.  
 in presence of Ca and Fe, spectroph., 1197.  
 of Ce, Th and Zr or of Th, U and Zr, ring colorim., 1755.  
 of  $\text{Ti}^{\text{II}}$  in soln., complexon, 96.  
 of  $\text{Ti}^{\text{IV}}$ , gravim., 2958.  
 volum., 36.
- Titanium, reagents for**, benzoylacetanilide, 94.  
 diantipyrinylmethane, 155.  
 2-(3-hydroxy-3-phenyltriazeno)benzoic acid, 2958.  
 N-phenylsalicylhydroxamic acid, 623.  
 tiron, 1197.
- Titanium alloys**, phase analysis of, 622.
- Titanium(IV) chloride**, detmn. of Fe in, by solvent extraction - photom., 2959.  
 of S compounds in, 1825.
- Titanium(IV) oxide**, detmn. of Ca and P in, mass spectrom., 1672.
- Titanium(IV) salts**, detmn. of free acid in soln. of, 96.
- Titrimetry, solid**, comparison with volum. analysis, 2243.
- Tobacco**, analysis of pectic substances in, by solvent extraction - TLC, 823.  
 detmn. of  $\text{H}_2\text{O}$  in, continuous, apparatus for, 2251P.  
 of trace elements in, mass spectrom., 1986.  
 identn. of bicyclohexyl in distillate from, by GLC, temp.-programmed, 824.  
 of cholesteryl esters in, by column chromatography and GLC of dimethylsilyl ethers of, 1444.

- Tobacco alkaloids**, sepn., by TLC, 1450.
- Tobacco smoke**, automated smoking machine for, 426.
- condensates, analysis, column chrom. - i.r. spectroph., 825.
- detection of nitrosamines in, by solvent extraction and TLC or GLC, 855.
- Tocopherol**, acetate, detmn., in multivitamin products, by GLC, 3214.
- detection, in fats, by TLC, spray reagent for, 1553.
- in wheat, by TLC, 3261.
- detmn., in plants, column chrom. on talc-spectroph., 2664.
- of  $\alpha$ -,  $\gamma$ -, and  $\delta$ -isomers of, in fats and fatty oils, thin-layer chrom. - spectroph., 2733.
- sepn. of isomers of, by TLC, 1480.
- Tocopherylquinones**, TLC of, 3C.
- Tolazoline**, detmn., in pharm. prep., by GLC, 1520.
- Tolbutamide**, detection, in urine, by TLC, 1422.
- detmn., in pharm. prep., spectroph., 3234.
- Toluene**, detmn., in presence of benzene, u.v. spectroph., 2531.
- oxidation products of, analysis, by GLC, 2536.
- , **nitro**-, detmn., in air, by GLC, 411.
- Toluenediamines**, analysis of isomeric, by GLC, 1941.
- o-Toluic acid**, detmn., in presence of phthalic acid, gravim. or spectroph., 243.
- Tomatine**, detmn., review of methods for, 2133.
- Tomato powder**, detmn. of amino-acids in, by GLC of methyl esters of, 378.
- Tonophos**, detmn., spectroph., 1526.
- Town gas**, analysis, by GLC, apparatus for, 1951.
- Toxicological analysis**, applications of the Feldstein extraction system in, involving TLC and u.v. spectrophotometry, 2602.
- detection of drugs in autopsy materials, 1413.
- detmn. of As in, spectroph., 3130.
- of drugs in blood, by solvent extraction and GLC, 2008.
- identn. of alkaloids in, paper electroph., 3193.
- of drugs, paper chrom., 294.
- Trace elements**, detmn., meaning of sensitivity in, 530.
- Tranquillisers**, identn., in urine, by TLC, 1416.
- Transformer oil**, detmn. of  $H_2O$  in, apparatus for, 3092P.
- Trehalose**, detmn. by  $IO_4^-$  oxidation, 1319.
- Triazen**, 1-aryl-3,3-dimethyl-, *o*- and *m*-deriv. of, paper chromatography of, 1962.
- 1,3,5-Triazine**, hexahydro-1,3,5-trinito-, detmn., by GLC, 279.
- Trichlorophenol**, detection, in animal tissues, by TLC, 2024.
- detmn., in milk, by assay of anticholinesterase activity in, 1559.
- in the technical product, ion-exchange chrom. - polarogr., 2747.
- Trichomyacin**, detmn., in pharm., tablets, in presence of carbosone, Fradil and chloramphenicol, X-ray diffraction, 940.
- Tricyclamol**, detmn., in pharm. tablets, non-aq. volum. or potentiom., 2152.
- Triethanolamine trinitrate pyrophosphate**, identn., in pharm. prep., by TLC, 1534.
- Triethylamine**, 2-(2-benzylphenoxy)-, hydrochloride, detmn., polarogr., as nitro-deriv., 935.
- Trimethylamine**, detmn. of  $NH_3$  and methyl ether in, by GLC, 733.
- Triphenylamine**, detmn., potentiom., in acetonitrile, 2539.
- Triphosphates**, sepn. from mono- and pyro-phosphates, in nucleosides, by TLC, 1475.
- Trisulphimide**, sepn. from sulphamide and imido-disulphamide, ion-exchange chrom., 1230.
- Triterpenes**, pentacyclic, sepn., in plants, by TLC, 1433.
- Tritium**, detection, on thin-layer chromatograms, by beta-ray-induced luminescence, 2875.
- detmn., in biol. materials, by solid-state scintillation counting, 1402.
- in GLC effluents, proportional counter for, 450.
- in natural water, simult. with  $^{86}Kr$ , by liquid-scintillation counting, 3274.
- in org. compounds, 1299.
- by O-flask method, apparatus for, 1035.
- Tritium oxide**, detmn., in air, monitoring system for, 1591.
- Tropical**, [*methylen*- $C^{14}$ ]-, sepn. of metabolites of, in bile and urine, by TLC, 819.
- Tryptamine**, *N*-acetyl-5-methoxy-. (See *Melatonin*.)
- , **5-hydroxy**-, detmn., in blood and c.s.f., fluorim., 2071.
- sepn., by GLC of ethers of *N*-heptafluorobutyl deriv., 3158.
- Tryptophan**, detmn., in leguminous seeds, comparison of methods for, 2080.
- in protein hydrolates, spectroph., 323.
- Tuberculostats**, GLC of, 1096C.
- Tubocurarine**, detection, in biol. tissues, in presence of other muscle relaxants, by ion exchange - spectroph., as reineckate, 809.
- Tungsten**, detmn., by catalytic method, automated, 1859.
- in minerals, ores or rocks, spectroph., 3007.
- in steel, photom., 1877.
- of combined N in, spectroph., 128.
- of gases in single crystals of, effect of surface gases on, 2449.
- of Hf in, spectrogr., 2451.
- of impurities in, by neutron activation, 129.
- by solvent extraction of 8-hydroxyquinoline complexes, 2450.
- spectrogr., 2340.
- of  $W^{VI}$ , spectroph., 130.
- electrochemical reduction of  $W^{VI}$  in presence of oxalic acid, 3006.
- sepn. from Mo, Nb and Ta, column chrom., 1758.
- from Mo, Nb and V, ion-exchange chrom., 1757.
- of  $W^{VI}$  and identn., by TLC, 555.
- Tungsten**, reagents for, benzohydroxamic acid, 130.
- catechol violet, 1877.
- toluene-3,4-dithiol, 1842.
- Tungsten alloys**, analysis of W - Mo, gravim. - complexom., 127.
- Tungsten bronze**, detmn. of Eu and Gd in, by photon activation and computer resolution of gamma-ray spectra, 131.
- Tungstogallates**, detmn. of Ga in, complexom., 77.
- Tyramine**, detmn., in urine, fluorim., 2068.
- Tyrosine**, detmn., in blood, fluorim., automated, 869.
- iodo-deriv., detection, by TLC, 872.
- detmn., in blood serum, in presence of iodine-containing X-ray contrast media, 3178.
- GLC of trimethylsilyl deriv. of, 2646.
- sepn. from iodo-thyronines, by solvent extraction, 873.
- sepn. of dinitrophenylene and dinitrophenyl deriv. of, ion-exchange chrom., automated, 3169.
- , ***N*-leucyl**-, sepn. of diastereoisomers of, ion-exchange chrom., 3174.



## U

- Ubiquinone, phytyl-**, detmn., by GLC - mass spectrom., as trimethylsilyl deriv., 338.
- Ultra-filtration.** (See under *Filtration*.)
- Undecan-2-one**,  $^2\text{H}$ -labelling of, by GLC, 1329.
- Uracil, 3-t-butyl-5-chloro-6-methyl-**, detmn., in crops and soil, by micro-coulom. GLC, 2741.
- Uranium**, detection, spot test for, 2405.
- detmn., amperom., 1180.
- complexom., 2891.
- in biol. materials, by neutron activation, 1999.
- in industrial wastes, polarogr., 1606.
- in minerals, ores or rocks, by ion exchange, 1289.
- by neutron activation, 2363.
- paper chrom., 1812.
- in presence of Th, Ti, and Zr, ring-colorim., 1755.
- of fission products of, radiom., 2409.
- of non-metallic elements in, review, 609.
- of U to O ratio in sintered ceramic fuel discs, electrolytic, 2936.
- of  $\text{U}^{\text{IV}}$  in minerals, ores or rocks containing Fe and  $\text{U}^{\text{VI}}$ , amperom., 1182.
- of  $\text{U}^{\text{VI}}$ , oscillopolarogr., 1756.
- spectroph., 2933.
- as thiocyanate, effect of gamma-radiation on, 2932.
- photom., automated, 2406.
- spectroph., reduction of  $\text{U}^{\text{VI}}$  to  $\text{U}^{\text{IV}}$  for, 607.
- isotopic analysis of B in, mass spectrom., 1815.
- solvent extraction of, with dibutyl phosphate, 1181.
- of  $\text{U}^{\text{VI}}$ , with diethylamine, 2408.
- Uranium, reagents for**, arsenazo III, 607.
- 5,7-dibromo-8-hydroxyquinoline, 2933.
- ferrom., 1756.
- 2',3',4'-trihydroxychalcone, 1180.
- Uranium alloys**, analysis of U - Np, coulom., 608.
- of U - Nb - Zr by X-ray absorption-edge method, 1811.
- Uranium(VI) oxide**, detmn. of non-uranic alpha-emitters in, 2937.
- Uranium oxides**, detmn. of U to O ratio in, volum., 2935.
- Uranyl ion**, detmn., spectroph., 2407, 2934.
- Uranyl nitrate**, detmn. of non-uranic alpha-emitters in, 2937.
- Urea**, deriv. of, chromatography of, 2850C.
- detection, in presence of related compounds, by TLC, 735.
- detmn., in biol. fluids, enzymic - fluorim., 1448.
- in blood, spectroph., as complex with biacetyl monoxime, 2064.
- in blood serum and urine, spectroph., 852.
- in presence of proteins, spectroph., automated, 853.
- in urine, colorim., 851.
- of dialkyldimethylammonium - urea adduct in, by X-ray diffraction, 231.
- pyridyl deriv. of, detmn., non-aq. potentiom., 2545.
- , **dihydroxy-**, detmn., spectroph., 3155.
- , **phenylthio-**, detmn., coulom., 3073.
- , **thio-**, deriv. of, detection, in presence of related compounds, by TLC, 735.
- Uric acid**, detmn., in blood serum, comparison of enzymic and colorim. methods for, 2638.
- enzymic - colorim., 2639.
- photom., automated, 892.
- Uridine diphosphate glucose**, detmn., in biol. tissues, enzymic - thin-layer chrom. - spectrofluorim., 1478.
- Uridine diphosphate glucuronic acid**, detmn., in biol. tissues, enzymic - thin-layer chrom. - spectrofluorim., 1478.
- Urinary calculi**, detmn. of Ca, P and S in, X-ray spectrogr., 803.
- Urine**, analysis, by use of multiple-test strips, 1983.
- assay of peroxidase, glucose oxidase and xanthine oxidase in, spectrofluorim., 2113.
- detection of amphetamine in, by TLC, 1418.
- of coumaphos in, by TLC, 1424.
- of oxazepam in, by TLC, 2605.
- of stilboestrol in, by TLC, 816.
- of tubocuarine and other muscle relaxants in, ion exchange - spectrogr., as reineckates, 809.
- detmn. of ajmaline in, as complex of bromocresol, spectroph., 295.
- of aldosterone in, paper - gas chrom., 1446.
- of amino-acids in, by TLC, 3165.
- of anisotropine methobromide in, spectroph., 2020.
- of antidiabetic drugs in, by TLC, 1422.
- of As in, coulom., 3131.
- of barbiturates in, by GLC, 2010.
- of benhepazone in, fluorim., 2014.
- of benzoic and hippuric acids in, ion-exchange chrom. - spectroph., 2616.
- of Be in, fluorim., 799.
- of bilirubin in, spectroph., 890.
- of Bi, Pb and Hg in, polarogr., after cementation on zinc, 1989.
- of Br<sup>-</sup> in, colorim., automated, 292.
- of 4'-t-butoxyacetanilide in, in presence of its metabolite, by GLC, 2013.
- of Ca in, complexom., 801, 802.
- ion-exchange chrom. - volum., 1993.
- of catecholamines in, fluorim., 2067.
- review of methods for, 3157.
- of chlorpromazine glucuronides in, spectroph., 815.
- of citrate in, spectroph., 826.
- of creatine in, enzymic - spectroph., 3159.
- of creatinine in, 317.
- automated, elimination of acetoacetate interference in, 858.
- of cystine in, spectroph., 2081.
- of diazepam in, by GLC, 812.
- by TLC - i.r. spectroph., 2015.
- of 17,21-dihydroxy-20-oxosteroids in, column chrom., 2058.
- of disulfiram metabolites in, chromom., volum. of colorim., 817.
- of ethchlorvynol in, by GLC, 2011.
- of ethyl ether in, by GLC, 2016.
- of fenfluramine in, in presence of norfenfluramine, by GLC, 1421.
- of ferrioxamine in, 2653.
- of F<sup>-</sup> in, by micro-diffusion - spectroph., 807.
- of N-formimidoylglutamic acid or urocanic acid in, enzymic, 2647.
- of furazolidone in, spectroph., 2606.
- of glucose in, enzymic - fluorim., 2027.
- spectroph., 821.
- of gonadotrophin in, pptg. agents for, 2652P.
- of homovanillic acid in, paper chrom. - spectrofluorim., 3141.
- of 3-hydroxyanthranilic acid in, enzymic - spectroph., 859.
- of  $\beta$ -hydroxy-5-ene steroids in, thin-layer chrom. - densitom., 2061.
- of 5-hydroxyindol-3-ylacetic acid in, spectroph., 861.
- of *p*-hydroxyphenylacetic acid and related phenolic acids in, colorim., 2620.
- of hydroxyproline in, spectroph., 324.

**Urine, determination—continued**

- of Fe in, colorim., 2600.  
spectroph., 808.  
of lactose in, enzymic - spectroph., 2030.  
of Pb in, atomic-absorption spectroph., 3129.  
and Cd in, polarogr., 2002.  
of Hg in, colorim., 286.  
of methylmalonic acid in, ion-exchange chrom. - colorim., 2617.  
of mucopolysaccharides in, column chrom., 308.  
of organophosphorus pesticide metabolites in, by GLC, thermionic detector for, 2608.  
of 17-oxosteroids in, colorim., comparison of methods for, 2060.  
of pentachlorophenol in, turbidim., 2022.  
of pharm. aralkylamines in, thin-layer chrom. - fluorim., 2017.  
of Pu in, by surface adsorption and ion exchange, 2000.  
of pregnadiol and pregnanolone in, simult., enzymic - gas chrom., 2057.  
of pregn-5-ene- $3\beta,17\alpha,20\alpha$ -triol, in, by GLC as trimethylsilyl ether, 3151.  
of sugar alcohols in, ion-exchange chrom., 304.  
of  $\text{SO}_4^{2-}$  in, paper chrom. - radiom., 2596.  
of sulthiame in, thin-layer chrom. - spectroph., 2018.  
of testosterone in, by TLC - GLC, 2055.  
of TI in, by solvent extraction - photom., 1998.  
and U in, by neutron activation, 1999.  
of *p*-tyramine in, fluorim., 2068.  
of urea in, colorim., 851.  
spectroph., 852.  
of uroporphyrin in, by solvent extraction - spectroph., 2092.  
of vitamin B<sub>6</sub> group in, paper chrom., 2009.  
of xanthurenic acid in, paper electroph. - spectroph., 3156.  
of Zn in, fluorim., 1996.  
identn. of chlorpromazine in, 1417.  
of 3,4-dimethoxyphenethylamine in, by TLC of dansyl deriv. and mass spectrometry, 319.  
of phenmetrazine in, by solvent extraction - paper chrom., 3137.  
of tranquillisers and hypnotics in, by TLC, 1416.  
sepn. of corticosteroids in, by sequential solvent extraction, 311.  
of glucuronides in, by GLC, 822.  
of hydrocortisone from its metabolites in, by TLC, 2059.  
of [methylene- $^{14}\text{C}$ ]tropital and its metabolites in, by TLC, 819.  
of 17-oxosteroids and progesterone metabolites of, by GLC, comparison of methods of hydrolysis for, 839.  
of testosterone from epitestosterone in, paper chrom. - spectroph., 845.
- Urocanic acid**, detmn., in urine, enzymic, 2647.
- Urochloralic acid**, detmn., in mixtures with chloral hydrate, trichloroacetic acid and trichloroethanol, spectroph., 298.
- Uronic acids.** (See also *Hexuronic acids.*)  
detmn., thin-layer chrom. - spectroph., 2231.  
reaction products with conc.  $\text{H}_2\text{SO}_4$ , detmn., u.v. spectroph., 302.
- Uroporphyrin**, detmn., in urine, by solvent extraction - spectroph., 2092.  
solvent extraction from urine, by filtration through solvent-impregnated silica gel, 1467.
- Utric acid**, sepn. from atranorin, in lichen extracts, by TLC, 1432.

**V**

- Valine, N-cysteinyl-**, identn., spectroph., 3173.  
—, *N*-leucyl-, sepn. of diastereoisomers of, ion-exchange chrom., 3174.
- Vamidithion S-oxide**, sepn. from *OO*-dimethyl-S-(methylcarbamoyl)methyl phosphorothioate, chrom., on formamide-impregnated paper, 961.
- Vanadate**, detmn. of Mo in, spectroph., 2987.  
oscillpolarogr., 109.
- Vanadium**, complexes with azoxine S dyes, study of, 1841.  
detmn., atomic-absorption spectroph., interferences in, 2985.  
by catalytic method, 1216.  
in clays, by solvent extraction - spectroph., 2432.  
in fuel ash, photom., 3044.  
in minerals, ores or rocks, coulom., 2436.  
photom., 1192.  
spectroph., 1874.  
in presence of Fe, atomic-absorption spectroph., 3019.  
of Mo, Nb and W, ion-exchange chrom., 1757.  
in slags, by solvent extraction - photom., 2984.  
in steel, by solvent extraction - photom., 2983.  
of Mo in, spectroph., 2987.  
of VIV, gravim., 2903.  
photom., 2433.  
volum., 634.  
and VV in mixtures, volum., 634.  
of VV, oscillpolarogr., 1756.  
potentiom., 1858.  
volum., 634.  
polarogr., 2986.  
u.v. spectroph., 2435.  
volum., comparison of methods for, 1214.  
sepn. of VV and identn., by TLC, 555.  
solvent extraction of VV, with benzoin  $\alpha$ -oxime, 110.
- Vanadium, reagents for**, arsenazo I, 2433.  
benzoylacetanilide, 2903.  
3-cyano-1,5-bis(2-hydroxy-5-sulphophenyl)-formazan, 1757.  
5-ethylamino-2-(2-pyridylazo)-*p*-cresol, 2984.  
feron, 1756.  
*N*-phenylbenzohydroxamic acid, 2434.  
*N*-phenylfurohydroxamic acid, 1874.  
4-(2-pyridylazo)resorcinol, 1365. 8  
*N*-(*o*-tolyl)benzohydroxamic acid, 1192.  
tribromopyrogallol, 2983.
- Vanadium(V) oxide**, detmn. of P in, ion-exchange chrom., 1834.  
of VIV and Fe in, photom., 2988.
- Vanadyl sulphate**, detmn., in presence of alkali nitrates, potentiom., with  $\text{Na-Fe(CN)}_6$  composition of ppt. in, 1215.
- Vancomycin**, hydrochloride, detmn., spectroph., 2689.  
identn., on TLC plates, densitom., 2689.
- Vanilla**, identn. of flavour compounds of, in foods, by TLC, 953.
- Vanilla extract**, identn. of resins and pigments in, by TLC, 3248.
- Vanillin**, GLC of, effect of tubing material on, 717.
- Vegetables**, detmn. of captan in, by solvent extraction and GLC, 957.  
of dinobuton in, column chrom. - spectroph., 3250.  
identn. of pesticides in, column - thin-layer chrom., 1556.  
screening test for carbaryl in, 958.
- Vermiculite**, organosubstituted, with quaternary  $\text{NH}_4$  salts, adsorptive properties of, 430.

**Vinyl chloride**, analysis of mixtures obtained in production of, by GLC, 3111.

**Vitamin A**, acid, detmn., simult. with vitamin-A aldehyde, spectroph., 899.  
detmn., in blood serum and liver tissue, by TLC, 900.  
in feeding-stuffs, thin-layer chrom. - spectroph., 990.  
in mixtures with related vitamins, comparison of column chromatography and TLC for, 2691.

**Vitamin-A alcohol**. (See *Retinol*.)

**Vitamin B<sub>6</sub>**. (See *Pyridoxine*.)

**Vitamin D**, detmn., in presence of vitamin E, column chrom., 2692.

**Vitamin K<sub>1</sub>**, detmn., gas chrom. - mass spectrom., as trimethylsilyl deriv., 338.

**Vitamin K<sub>2</sub>**, detmn., gas chrom. - mass spectrom., as trimethylsilyl deriv., 338.

**Vitamins**, identn., in multi-vitamin tablets, by circular TLC, 924.

**Voltammetry**, anodic-stripping, from hanging Hg-drop electrode, conditions for, 501.  
use of ion-exchange membranes in, 492.  
electrodes for, 2315, 2316, 2317.  
platinum, continuous activation of, 3342.  
purification of pyridine for use in, 1094.  
theoretical study of, 1115.

**Volumetric analysis**, biamperometric, applications of, 2322.  
interpretation of curves in, 2323.  
with chelating agents, 545.

**Volumetric analysis**, chronopotentiometric, anodic-stripping, technique of, 1697.

**Volumetric analysis**, complexometric. (See also *Indicators*, metallochromic.)  
masking properties of thio-ethers in, 16.  
potentiom., with MnO<sub>2</sub> indicator electrode, 1118.  
titration of mixtures of metal ions by, conditions for sharp end-points in, 1108.  
graphs for, 539.

**Volumetric analysis**, conductimetric, h.f., electrode-system for, 3340.  
semi-automatic recording apparatus for, 1696.  
location of end-points in, 506.

**Volumetric analysis**, coulometric, apparatus for, 1700P, 2846P.  
differential controlled-potential, with use of substoichiometric isotope dilution, 1702.  
flow-through cell for simult. polarogr., coulom. and spectroph. measurements, 1691.  
generation of I<sup>-</sup> in, conditions for, 104.  
of S<sup>2-</sup> and SCN<sup>-</sup> in, electrodes for, 507.

**Volumetric analysis**, coulometric, technique of, 3345.

**Volumetric analysis**, photometric, use of photo-voltaic receptor in, 1619.

**Volumetric analysis**, potentiometric, application to org. compounds, review, 1896.  
automated, adaptation for micro-titrations, 504.  
indicator electrodes for, impregnated parchment paper as, 3344.  
linear null-point technique for, 503.  
nitromethane as solvent in, 1694.  
Pt - Rh electrode for, 1692.  
polarised indicator-electrode for, 3343P.  
recording spectroph. titrator for, 1695.  
sulpholans as solvents in, 1693.  
sulphonic and perchloric acids as titrants in, 11.

**Volumetric analysis**, redox, Co<sup>III</sup> soln. as titrant in, 2859.  
titration curve equations for, 2321.

**Volumetric analysis**, thermometric, apparatus for, 1719.

**Volumetric analysis**, thermometric—continued  
of metals, by formation of complex fluorides, 2871.

pptn. reactions in, 1718.

## W

**Warfarin**, detmn., in blood, by solvent extraction - polarogr., 3138.  
photom., 1525.

**Water**, detmn., by Karl Fischer method, amendment to B.S.I. method for, 2350.  
use of dimethylformamide in, 1893, 1894.  
in liquids or solids, by extraction with dimethyl phthalate and i.r. absorption, 1130.  
in natural drugs, by GLC, 2127.  
in powders, by microwave absorption, 1669P.  
isotopic analysis of, i.r. spectroph., use of dimethyl sulphoxide as solvent in, 557.  
mass spectrom., 1766.

**Water, industrial**, analysis, B.S.I. methods for, 415.  
boiler, analysis, B.S.I. methods for, 416, 2351.  
detmn. of Ni in, by solvent extraction - spectroph., 3282.

**Water, natural**, analysis, automated, 2225.  
detmn. of abate in, by solvent extraction - GLC, 1015.  
of alkylbenzenesulphonates in, by solvent extraction - spectroph., 1603.  
of Al in, photom., 1010.  
of benzo[a]pyrene in, spectrofluorim., 3273.  
of B in, spectroph., 2210.  
of Ca in, flame photom. or atomic-absorption spectroph., 3275.  
and Mg in, complexom., 1006.  
of CO<sub>2</sub> in, by BaCl<sub>2</sub> pptn. - borax fusion method 3276.  
of Cl, free and bound in, amperom., 2759.  
of Cr in, atomic-absorption spectroph., 2228.  
of Co in, spectroph., 1014.  
of dissolved O in, by modified Winkler-syringe technique, 2227.  
complexom., 414.  
nomogram for, 1012, 2756.  
of F<sup>-</sup> in, colorim., 1008, 1601.  
comparison of methods for, 1009.  
of gases and dissolved CO<sub>2</sub> in, by GLC, calibration and sample-injection systems for, 2755.  
of hardness of, temporary and total, volum. on a single sample, 3272.  
of hexachlorocyclohexane in, by GLC, 2230.  
of I<sup>-</sup> in, absorption., 1602.  
polarogr., 2760.  
of <sup>131</sup>I in, gamma-ray spectrom., 2761.  
of Fe<sup>II</sup> in, photom., 2762, 2763.  
of Mn in, atomic-absorption spectroph., 3278.  
of metals in, atomic-absorption spectroph., 2226.  
polarogr., review, 1990.  
of Mo in, comparison of methods for, 3277.  
of NO<sub>2</sub><sup>-</sup> and NO<sub>3</sub><sup>-</sup> in, 401.  
of pollutants in, continuous simult. monitoring system for, 1604.  
of radioisotopes of Ru, Mo, Te, Sn and Sb, scheme for, 2229.  
of SO<sub>4</sub><sup>2-</sup> in, ion-exchange chrom. - spectroph., automated, 2757.  
of Th and U in, by neutron activation, 1999.  
of trace elements in, spectrogr., 418.  
of <sup>3</sup>H and <sup>85</sup>Kr in, simult., by liquid-scintillation counting, 3274.



**Water, natural**—*continued*

from mine-drainage, detmn. of Ca + Mg and Mn + Zn in, ion-exchange chrom. - complexom., 1013.

org. constituents of, concn. of, by freezing or solvent extraction, 1011.

—, **rain**, detmn. of  $^{137}\text{Cs}$ ,  $^{89}\text{Sr}$  and  $^{90}\text{Sr}$  in, ion-exchange chrom. - radiom., 1016.

of radioisotopes in, ion-exchange chrom. - beta-ray counting, 1600.

of  $\text{SO}_4^{2-}$  and  $\text{Cl}^-$  in, ion-exchange chrom. - volum., 2758.

—, **sea**, detmn. of  $\text{NH}_3$  in, colorim., 2765.

spectroph., manual or automated, 2764.

of  $\text{C}_1$  to  $\text{C}_4$  hydrocarbons in, by GLC, 1018.

of Co in, co-pptd. with Fe and Mn, spectroph., 3280.

of Co, Zn and U in, ion-exchange chrom., by co-pptn. with alkaline-earth phosphates, 1017.

of Fe in, spectroph., 144.

of Rb in, flame photom., as tetraphenylborate, 417.

of Sr in, by isotope dilution, 1670.

—, **swimming-pool** detmn. of I,  $\text{I}^-$  and  $\text{IO}_3^-$  in, presence of  $\text{Cl}^-$ , spectroph., 1007.

**Water-baths**, semiconductor control for thermostats for, 1022.

**Waxes**, hydrocarbon, detmn. of chain-length distribution of paraffins in, 3095.

of methyl groups in, i.r. spectroph., 3094.

**Weighing**, calibration of microbalances, gravim. method for, 3288.

review of balances for, 2237.

**Wheat**, analysis of amino-acids of, prepn. of samples for, 396.

detection of tocopherol in, by TLC, 3261.

detmn. of chlorocholine in, column-chrom. - spectroph., 991.

differentiation of hard and soft, by GLC, 1095C.

comparison of methods for, 984.

milling products, evaluation by light reflectance of, leucometer for, 371.

seedlings of, detmn. of nucleotides in, paper chrom. - spectroph., 1474.

**Wheat flour**. (See *Flour*.)

**Whisky**. (See *Spirits, potable*.)

**Wine**, detmn. of ascorbic acid in, 1095C.

of captan in, i.r. spectroph., 2195.

of citric acid in, colorim., 1567.

of lactic acid in, spectroph., correction for aldehyde sulphite in, 2731.

of reducing sugars in, cerim., 1568.

of sugars in, by GLC, 2730.

of Zn in, ion-exchange chrom. - spectroph., 977.

red, sepn. of tannins of, ion-exchange chrom., 391.

**Wood**, detection of preservatives in, by TLC and GLC, 1379.

detmn. of acetyl groups in, 1965.

of  $\text{Na}_2\text{B}_4\text{O}_{13} \cdot 4\text{H}_2\text{O}$  in Sitke spruce, photom., 2565.

**Wood pulp**, analysis of carbohydrates of, 1966.

detmn. of  $\text{H}_2\text{S}$  and  $\text{SO}_2$  in waste gases from, by GLC, 773.

**Wool**, detmn. of Al in, atomic-absorption spectroph., 268.

of cystine in, volum., 3172.

of lanthionine in, by TLC, 3104.

and N-lysylalanine in, spectroph., automated, 1382.

of mercapto-groups and cystine in, spectroph., 2566.

**Wort**. (See *Malt Wort*.)

**X**

**Xanthine**, detmn., in urine, simult. with hypoxanthine, enzymic - spectroph., 336.

—, **8-aza**, detmn., in tissue homogenates, colorim., 337.

**Xanthotoxin**, paper chromatography of, effect of paper impregnation with dimethylformamide on, 2128.

**Xanthurenic acid**, detmn., in urine, paper electroph. - spectroph., 3156.

sepn. from 3-hydroxykynurenine and kynurenine, by TLC, 871.

**Xenon**, enrichment of  $^{134}\text{Xe}$ , apparatus for, 2250.

**X-ray contrast media**, iodine-containing, detmn. of stability of, volum. or colorim., 941.

error in analysis of thyroid hormones introduced by, 3178.

**X-ray diffraction**, automated low-temp. system for, 2812.

safety shutter for G.E. instrument, 1653.

sample holder for, 2811.

micro-culture slide as, 461.

use of  $^{55}\text{Fe}$  K X-rays on LiF as source in, 460.

**X-rays**, dispersion of 1-Å with NPL gratings, 2814.

measurement of intensity of, produced by electron-beam irradiation, applications of, 154.

**Xylene**, detmn., in air, absorptiom., 1597.

isomers of, detmn., in presence of ethylbenzene, 2531.

**1,3-Xylene, 4-nitro**-, detmn. of dinitro-deriv. in, polarogr., 1961.

**2,6-Xylenol**, detmn., spectroph. by reaction with tetracyanoethylene, 778.

**Xylenol orange**, sepn. from semi-xylenol orange, column chrom., 536.

**Xylometazoline**, detmn., in pharm. prep., by GLC, 1520.

**Y**

**Yeast**, detmn. of fatty acids in, 1565.

**Yttrium**, detmn., in La salts, by solvent extraction - fluorim., 2926.

in presence of Zr, complexom., 97.

prepn. of carrier-free  $^{90}\text{Y}$  from  $^{90}\text{Sr}$  -  $^{90}\text{Y}$  mixtures, 2921.

sepn. from Dy, by ion exchange, 2394.

**Yttrium, reagents for**, 5,7-dibromo-8-hydroxyquinoline, 2926.

methylthymol blue, 1164.

**Yttrium oxide**, detmn. of impurities in, spectrogr., 2395.

of rare-earth metals in, spectrofluorim., 1800.

**Z**

**Zearalenone**, detmn., column - thin-layer chrom., 2183.

**Zeidane**, detmn., in vegetable oils, by extractive distillation and GLC, 1561.

**Zeolites**, detmn. of metals in, X-ray spectrogr., 177.

**Zinc**, adsorption of, on cellulose, 1154.

complex with benzimidazole, study of, 62.

detmn., amperom., 2864.

atomic-absorption spectroph., 60.

gravim., 1749.

in blood plasma, atomic-absorption spectroph., 1997.

fluorim., 1996.

in Pb - Zn ores, by photon activation, 2374.

in minerals, ores or rocks, in presence of Cd and other elements, atomic-absorption spectroph., 582.

**Zinc**, determination—*continued*

- in plants, simult. with Mn and Fe, X-ray spectrogr., 2599.
  - in presence of Cd, anodic-stripping chronopotentiom., 1697.
  - of Co and Cu, spectroph., 550.
  - of Mn, complexom., 581.
  - in semiconductors, a.c. polarogr., 2445.
  - in skin, by neutron activation, 282.
  - in urine, fluorim., 1996.
  - of Cu in, photom., 1143.
  - of impurities in, spectrogr., 61.
  - comparison of methods for, 2375.
  - of Fe in, spectroph., 677.
  - of Ni in, photom., 1789.
  - potentiom., with an ion-exchange electrode, 2898.
  - spectrogr., effect of Si on, 45.
  - solvent extraction of, with 8-hydroxyquinoline deriv., 1788.
- Zinc, reagents for**, dilituric acid, 1749.
- 1,2-di(thiocarbamoyl)hydrazine, 2864.
  - dithizone, 690.
  - 8-mercaptoquinoline, 1163.
  - oxine blue, 550.
  - zincin, 977.
- Zinc alloys**, detmn. of Cu and Fe in, ring colorim., 1117.
- sampling of, 1117.
- Zinc amalgam**, detmn. of Cd in, photom., 703.
- Zinc selenide**, analysis, 2378.
- detmn. of impurities in, photom., 2376.
- Zinc sulphate**, detmn. of Hg, U and Yb in, by neutron activation, 1158.
- Zinc sulphide**, detmn. of impurities in, photom., 2376, 2899.
- of Se in, 2378.

- Zineb**, degradation products of, detmn., in fungicides, by TLC, 998.
- detmn., polarogr., 3270.
- Zirconium**, complex with xylanol orange, solvent extraction of, 1199.
- detmn., atomic-fluorescence spectroph., 33.
  - complexom., comparison of indicators for, 2961.
  - gravim., 2960.
  - in minerals, ores or rocks, X-ray spectrogr., 1826.
  - in presence of Y, complexom., 97.
  - of Ce, Th and Ti or of Th, Ti and U, ring colorim., 1755.
  - in steel, by solvent extraction - spectroph., 1273.
  - spectroph., 156.
  - photom., 2962, 2963, 2964.
  - polarim., 2965.
  - potentiom., 245.
  - spectroph., with arsenazo III in HCl soln., effect of gamma-radiation on, 2333.
  - polarogr. study of, in dimethyl sulphoxide soln., 2418.
  - solvent extraction of, as thiocyanate, with acetophenone, 2420.
- Zirconium, reagents for**, arsenazo III, 1273.
- catechol violet, 2962.
  - 3-cyano-1,5-bis(2-hydroxy-5-sulphophenyl)-formazan, 2964.
  - galloxyanine MS, 2963.
  - 3-nitrophthalic acid, 2960.
  - picramine R, 1273.
  - xylanol orange, 156.
- Zirconium alloys**, detmn. of H-isotopes in, by GLC, 1200.
- Zirconium oxide**, detmn. of Zr to O ratio in, 1827.
- Zone melting**, apparatus for, study of efficiency of, 1031.





